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ABSTRACT

This document represents proceedings of a workshop before the Senate Special Committee on Aging. The workshop focused on the severe shortage of health professionals in the rural health care system. Opening remarks by Portia Mittelman, Staff Director of the Special Committee on Aging and Jeffrey Human, Director of the Office of Rural Health Policy provide an overview of the problems and issues associated with delivery of rural health care services, including shortage of rural medical professionals, recruiting and training of medical students who will work in rural areas, and the existing programs focusing on rural health service delivery. The first panel of the workshop, with four speakers representing leaders in rural health care, examined national policies regarding the education of health professionals and the barriers to improvements. The panel emphasized personal sacrifices of rural health professionals, the need for professional support, medical students specialty choices, financial support for family medicine programs and primary care services, and improvement of rural manpower distribution. The second panel, consisting of five speakers, presented information on specific exemplary model programs that link medical education and training to rural areas. The appendix includes information about educational and community programs that address the health care needs of rural areas, articles addressing medical education reform, and written testimonies from various sources. (LP)

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S. HRG. 102-573

LINKING MEDICAL EDUCATION AND TRAINING TO RURAL AMERICA: OB- STACLES AND OPPORTUNITIES

ED347038

WORKSHOP

BEFORE THE

SPECIAL COMMITTEE ON AGING UNITED STATES SENATE

ONE HUNDRED SECOND CONGRESS

FIRST SESSION

WASHINGTON, DC

JULY 29, 1991

Serial No. 102-8



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LINKING MEDICAL EDUCATION AND TRAINING TO RURAL AMERICA: OBSTACLES AND OP- PORTUNITIES

MONDAY, JULY 29, 1991

U.S. SENATE,
SPECIAL COMMITTEE ON AGING,
Washington, DC.

The Committee met, pursuant to notice, in the Dirksen Office Building.

Staff present: Portia Porter Mittelman, staff director; Jennifer McCarthy, professional staff; Mary Berry Gerwin, minority staff director/chief counsel; and Thomas Mitchell, graduate fellow.

OPENING STATEMENT OF PORTIA PORTER MITTELMAN, STAFF DIRECTOR, SENATE SPECIAL COMMITTEE ON AGING

Ms. MITTELMAN. Good morning, everyone. My name is Portia Mittelman. I'm the Staff Director of the Special Committee on Aging, and on behalf of Senator Pryor, who is the Chairman of our Committee, and also Senator Cohen, the Committee's ranking Minority member, we welcome you to this morning's forum. A warm welcome also to our distinguished panelists.

Senator Pryor is deeply concerned about the state of health care in rural America. Although he comes from Arkansas, the problems there—the bankrupt hospitals, the absence of health care practitioners, and the great distances people must travel for health care—are found in rural communities all across the Nation.

Today's workshop, will focus on one very important—yet largely overlooked—reason why the rural health care system has too few doctors, nurses, and other health care personnel. We will also explore what needs to be done to change that.

The recommendations that come out of today's workshop will serve as a resource for the Chairman and other Senators who are committed to improving our Nation's rural health care system. Senator Pryor had hoped to be here today, but as many of you know, he is recuperating from a heart attack and thought he should take some more time off before returning to the Senate. But he did instruct us to go ahead with the workshop, so today we are presenting this forum.

At this point I would like to express the Committee's appreciation to those individuals who have been especially helpful in putting together this workshop. Included are Katie Kiedrowski and Dr. Darryl Leong of the National Association of Community Health Centers, and Dena Puskin of the Office of Rural Health Policy.

(1)

Also special thanks to Bob Politzer and Shirley Johnson of the Bureau of Health Professions, and to Dr. Mark Rivo of the Division of Medicine.

I urge all of you to play an active role in this workshop today. As you see we have microphones in the aisle, and we do encourage you to use them to make comments and ask questions of the panelists. We want to make this a very interactive forum.

Before I turn this over to our moderator, I would like to recognize Jennifer McCarthy who has been the driving force behind today's forum. Thomas Mitchell, who assisted Jennifer, also deserves special mention.

Now I would like to turn the hearing over to Jeff Human, who will be giving an introduction, and also serving as moderator. As I'm sure you all know, Mr. Human is the Director of the Office of Rural Health Policy within the Department of Health and Human Services, and plays a key role in efforts to improve rural health care.

Jeff.

STATEMENT OF JEFFREY HUMAN, DIRECTOR, OFFICE OF RURAL HEALTH POLICY, DEPARTMENT OF HEALTH AND HUMAN SERVICES

Mr. HUMAN. It is a pleasure to be moderating this important workshop on health professions education in rural America. I would like to begin by noting the people who are sitting up here at the head table, and I will introduce them in more detail later: Dr. Fitzhugh Mullan to my right; Dr. Tom Bruce and Dr. Mike Whitcomb.

Bruce Behringer, who is listed on your program, is driving up from southern Virginia, and I'm told the weather is very bad. We expect he will be here before his turn to speak comes. We certainly hope so.

The Senate Special Committee on Aging has a well-deserved reputation for advancing the interests of America's older citizens. But it also has an equally strong reputation of advocacy for America's rural citizens. These two groups are more than compatible, since the percentage of older Americans who reside in rural areas is about 25 percent higher than for urban areas. Older Americans are more likely to have trouble securing the care that they need, and more likely to need care than other Americans.

Senator David Pryor of Arkansas, the Chairman of this Committee, has throughout his career championed the cause of older Americans and rural Americans. I am sure all of us here this morning regret very much that Senator Pryor could not be with us today. But the good news is, as Portia indicated, that his recovery is progressing very well, and is expected to be complete in the near future.

We are all well aware that in rural communities we have severe shortages of health professionals of all types. Inherent in this bad news is the good news: there are opportunities for solutions to our problems at the very origins of the problems themselves. Today we will examine one of these sources, health care education. We will look at the extent to which our approach to education contributes

to the problem of too few rural health professionals, and we will consider strategies for reform, as well as models of reform.

Medical schools are places where young Americans go to learn how to practice medicine. They are also the places where basic attitudes toward rural medical practice are likely to be formed. How the medical school structures the learning process and attempts to influence the specialty choices and locational choices of the students will have much to do with whether a young man or woman becomes a suburban surgeon, or family physician in a small town in America's heartland.

Federal policy can also influence these choices, at least indirectly, by the way we fund medical schools under Title VII of the Public Health Service Act, or even more dramatically by how graduate medical education funding under Medicare either favors medical schools that send large numbers of student to practice primary care in rural areas or conversely favors medical schools that send large numbers of students to practice narrow specialties in the Nation's largest cities.

During the morning, our first panel will look at national policies regarding health professions education. After lunch, we will shift our attention to some of the best examples of programs that work, model programs that ought to inform any national strategy on medical and health professions education. After each panel, we will open the discussion to include the audience and ask that you give your recommendations and comments regarding the policies that are being discussed.

Today we have with us some of the brightest and best leaders of this country's health care community. Our hope is that after we hear from them and from outstanding health leaders who are with us in the audience, we will have crystallized some excellent strategies for overcoming America's rural health problems.

Let us sharpen the focus now on the shortage problem with some salient numbers. To begin, only 6 percent of recent graduates from America's medical schools are now practices in rural areas. This is revealed by a study which our office commissioned from the Rural Health Research Center at the University of Washington. With 25 percent of the people residing in rural areas, obviously we need to send more than 6 percent of our doctors to rural America. Mike Whitcomb, M.D., will discuss these findings in more detail later this morning.

What can we do to change these numbers? Here are eight strategies that seem to be helping in some parts of the country:

One, we can reach kids with scientific aptitudes well before they are ready to apply to college to other health professions education programs. These kids often stay rooted in their communities. A good example of a successful program is the Kirksville College of Osteopathic Medicine in Kirksville, MO.

Although Kirksville's student body comes from throughout the country, a significant portion comes from northeast Missouri, because the faculty reaches out to the junior high schools, the high schools and Northeast Missouri State College, to find and develop students with scientific aptitudes. The college offers special summer programs to develop the talents of these students and to interest them ultimately in osteopathic medical education.

These students are local, rural residents who tend to stay local after they graduate from Kirksville, and tend to provide much of the medical care to rural residents to northwest Missouri. We like this program so well in our office that we are currently working with the Tuskegee University on a similar program for rural minority students. Right now we are also developing with Tuskegee a videotape for minority students in the junior high schools to interest them in health care careers.

Two, we can do a better job of admitting rural residents to medical schools. Between 1978 and 1986, the number of matriculants to American medical schools from rural areas decreased 31 percent. However, there are many medical schools that have done well during this period in graduating students who now serve in rural areas. They use a wide variety of strategies to attract more rural students.

For example, the University of Georgia Medical School has extended the principle of affirmative action to include all rural applicants for medical school, regardless of race. The University of Washington includes rural family physicians on its admissions committee to ensure consideration of rural applicants.

Three, we can reshape medical curriculums to emphasize community practice equally with hospital practice. One of our speakers this morning, Dr. Tom Bruce, co-authored a book on curriculum reform at the University of Arkansas Medical School. Under the program, each medical professor was to reorient each course to place the proper emphasis on community practice. Have the Arkansas reforms helped? It is difficult to attribute success to a single cause, but only three medical schools in the country place a higher percentage of graduates in rural areas than Arkansas.

Four, we need to offer preceptored clerkships to medical students to serve under board-certified rural physicians in rural areas as a part of their undergraduate medical education. This kind of program offers the first introduction many medical students have to rural practice and to living in rural areas.

It makes it possible for urban and suburban students to imagine for the first time what it would be like to undertake a rural practice. It also provides an excellent educational experience for all medical students to practice a more cognitive and less procedure medicine, and leads to sounder medical skills.

Probably the best example of rural preceptorship is the Rural Physician Associate Program at the University of Minnesota. Students there may elect to spend their entire third year in a rural preceptored internship. The program is educationally sound. Students who have taken it since 1971 have done just as well in fourth year medical school performance as those who remained in the classroom.

But the really exciting statistic is the 57 percent of the students who have participated in the program have gone on to practice in rural Minnesota. Many much shorter programs such as those offered at the University of New Mexico, the University of Nebraska, and Marshall University, also are valuable to medical students.

Five, we need and can have medical schools without walls. By this I mean medical schools that extend their training and develop-

ment activities outward to support rural physicians throughout the State, and help keep rural physicians in practice.

One such program is the Visiting Clinicians Program at the University of West Virginia Medical School. This program brings 50 board-certified family physicians to the University six times a year. While there, they do many things. They teach undergraduates, see patients with residents, make grand rounds at the Health Sciences Center, seek consultation from specialists about their own patients, and arrange for undergraduate clerkships with their practices.

This program is designed to reduce the isolation of rural physicians, to prevent burnout and to provide the support that will encourage medical students and residents to serve rural areas as well.

Telecommunications increasingly augment this effort. For example, the West Virginia Medical School also offers an 800 number to rural physicians for 24-hour consultation. The message to rural physicians from programs like this is, "You are not alone. Support is available." We expect telemedicine and what is called interactive distance education to become increasingly important in breaking down the traditional walls around medical schools and other health profession schools.

Six, we need to follow medical students through their residencies and match them to rural communities in need. The University of Iowa Medical School historically has been very successful in this matchmaker role of interesting communities and medical residents in each other, and brokering concrete agreements. Many area health education centers do similar work with Federal support from the Bureau of Health Professions of the Health Resources and Services Administration. Our first speaker, Fitzhugh Mullan, directs that Bureau.

Seven, we need more interdisciplinary training programs, such as the one that Dr. Sandra Hullett will describe for us later today. We cannot solve America's rural problems with physicians alone. We need training programs that bring together physicians, nurse practitioners, physician assistants, psychologists, social workers, and other health professionals in multidisciplinary teams to serve rural areas. Medical school education should lay the foundation for this process by teaching physicians to extend their services through such teams.

East Tennessee State University's Medical School in Johnson City is one of the pioneers in this area. There the training of physicians and nurse practitioners are linked at many points so they know how to work together upon their graduation.

Eight, we can solve other health professions shortages in rural areas as well, with similar strategies. For example, we need to train nurses at all levels in rural settings, and begin by selecting nurse students who have strong ties to rural communities. On the Pine Ridge and Rosebud Indian Reservations in South Dakota, the Oglala Lakota College offers an associate degree nursing program that is linked with a nearby baccalaureate program.

Thus, associate degree nurses can go on to complete the baccalaureate program from South Dakota State University. Local people for the most part comprise the student body, both Native Americans and others from the local ranching and farming com-

munities. Upon graduation, almost all the nurses remain in the local area.

Today we are preparing to tackle our rural health problems through medical education reforms. Is this all we can do? Of course not. Many more possibilities await us. Let me in closing briefly mention three.

First, we need a much stronger emphasis on rural economic development. As health professionals we notice the hospitals closing and the doctors leaving rural towns. We also need to notice that the schools and manufacturing plants are closing and professionals of all sorts are leaving the small towns and communities. We need to revitalize rural America.

Second, we need to think rural as we contemplate health systems reform. If we were suddenly to reform the system and grant health insurance cards to everyone tomorrow, it would help very little in many rural areas because there would be no doctors to hand the card to. Rural capacity building needs to be a part of any reform of the health care system we undertake during this decade.

And third, we can and must compensate rural physicians more fairly. We will never attract the numbers of physicians we need to rural America unless we offer competitive compensation. There are many ways to increase the compensation of physicians in rural areas. Senator Pryor has introduced legislation to give tax credits to physicians serving in undeserved rural areas.

The National Advisory Committee on Rural Health has proposed that the Medicare physician payment pot be redistributed so that each rural primary care physician, for example, would get at least \$80 for any procedure which an urban physician gets \$100. We also all hope that the Medicare Resource Based Relative Value Scale will be another step down the road to fair compensation. It is a destination we simply must achieve.

Throughout the day, many of our speakers will be elaborating on these ideas. I hope many new approaches to adapting medical education to meet rural needs also will be suggested. I think I speak on behalf of all of us in thanking Senator Pryor, Senator Cohen, and all the other members of the committee for giving us the opportunity to put these possibilities before the American people. We thank the committee staff as well.

Now let's turn to our speakers. Our first speaker this morning is Dr. Fitzhugh Mullan. Dr. Mullan is Director of the Bureau of Health Professions of the Health Resources and Services Administration. In this position, he administers a national program of assistance to medical and health professional schools, as well as to programs to support area health education centers. And he supports a rural interdisciplinary training program. I am sure he will mention that as well.

Dr. Mullan is a pediatrician, an historian of public health in the United States, an author whose first book was subtitled "The Political Education of an American Medical Student." He is a founder of a national cancer action support group for cancer victims, and he is a health professional whose commitment to securing access to health care for all American citizens has been the hallmark of his distinguished career. He is also a good friend and neighbor.

Dr. Mullan.

STATEMENT OF FITZHUGH MULLAN, M.D., DIRECTOR, BUREAU OF HEALTH PROFESSIONS, DEPARTMENT OF HEALTH AND HUMAN SERVICES

Dr. MULLAN. Thank you, Jeff. We both live in rural Garrett Park, MD, which does have trees and fields. I am glad to be here and have the opportunity to comment briefly and contribute to what I hope will be a rich dialogue on these perplexing and erstwhile issues.

I think the questions before us on rural health, rural health delivery, and rural health adequacy are longstanding, and ones that I don't think we have found the precise key to unlock. And I think having spoken to rural residents over a period of months, they remain dedicated to trying to find answers. The problems are not getting distinctly better.

In the Bureau, we have a number of programs that the Congress has enacted, and that we manage that deal with the problems. What are the problems? There are many statistics we are all familiar with. I wanted to pick just a few to frame it a little bit.

While roughly a quarter, 23 percent, of the U.S. population is rural, only 13 percent of patient care physicians and 6.7 percent of hospital based physicians work in rural areas. So we are running at about half of what should be the weighted national distribution of physicians. Fifteen percent of registered nurses are rural, and 13 percent of physician assistants. So again, they are running at about half of what they ought to be in order to provide adequacy, at least on a par with the rest of the population.

By 1988, there were 98 primary care physicians per 100,000 population in the United States across the board. In rural areas, however, the figures were only 56 per 100,000, and dipping as low as 45 per 100,000 in areas such as Alabama, Tennessee, and Louisiana.

In the nursing area in 1990, it was estimated that the nursing shortage in rural areas was 45,000 and it is projected to be as high as 75,000 by the year 2000. As Jeff referenced, between 1981 and 1988, 188 rural hospitals closed. That represented almost half the hospital closings in this country. The situation remains, as I mentioned, problematic.

The programs in the Bureau which I think people are familiar with emanate from some old authorities, the Area Health Education Centers, in particular, that have been with us since the early 1970's, a very effective family of programs, distributed across the country, many of which have strong rural ties.

In addition, there are several new programs, the New Generation Health Education and Training Centers, which are an adaptation of the Area Health Education Centers, legislated in our last reauthorization of Title VII, and in addition, the Rural Interdisciplinary Authority, which was added to Title VII in our 1988 reauthorization. Under that authority, we can fund interdisciplinary training programs focused on rural areas and rural problems.

Under that program, the first year of grants was actually the 1990 cycle. Eleven grants were made, for a total of \$2.1 million. That's an interesting figure, and I leave it to you as to whether it's adequate or not. Only 26 applications were received, of which I believe 13 made the cut line, and 11 were funded.

There is an additional cycle underway at the moment of \$1.5 million new dollars that are in our 1991 appropriation, and we will probably be able to fund six or seven new grants. Happily, the ratio of applications has gone up. We have 36 applications in-house at the moment.

I raise those figures not to lose you in the statistics of the bureaucracy, but to say that we need to stimulate those institutions across the country that are potential applicants to keep the pressure on politically, in the sense that you need a rich set of applicants as well intellectually. One can surmise that with 26 applicants in the first round and 36 in the second, it is altogether likely we don't even have an applicant per State. So there are more entities that could submit grant proposals.

In addition, we have sponsored or been the base for the National Rural Health Association study of models to meet rural health care needs, which is an ongoing activity. Many of the figures I've cited and others have derived from that. In the first year of the project, they looked extensively at supply and adequacy of health manpower in rural areas, as well as the needs of special populations. In the current year, they will be looking particularly at education and training programs, assessing them as to their adequacy and making recommendations as to the directions in which we should go.

Finally, there is a small program which is run through a Medicare authority, the Rural Medical Education Demonstration Activity, which is designed to stimulate rural hospitals to run residency programs. The principal is, there are many disincentives in the Medicare system of reimbursement for GME currently to getting physicians into rural areas as trainees.

This program is designed to offset those disincentives by continuing to provide complete funding to the mother institution, the index hospital from which the resident would rotate, to a rural institution, and in addition provide sustenance, additional funds, which would help with transportation and additional costs of having the resident in rural areas.

There have been very few applicants and fewer awardees under this, and it is an area that is of concern. I do not understand entirely why it has generated so little interest. But it stands as a good idea for how to begin to move one important system, Medicare GME reimbursement, and it seems not to be effective, and in discussion I would be interested to hear from those familiar with it what the problems are, why it has not been received as a very enticing modification on current programs.

That's kind of a snapshot of what is going on now, in and around the Bureau of Health Professions. I want to spend the remainder of my time in a somewhat more strategic and philosophical discussion of what the underlying problems are, from the perspective of the health professions. And I would posit to you that the principal underlying problem in rural health professions is tied to a larger, systemic problem of the infrastructure of the health professions, particularly of medical education in this country.

We are losing the battle for generalism. We are moving ever more towards a system that is a vulcanized system of specialty

service delivery; and that affects all sectors of health delivery in this country.

There are those who are becoming apologists for that perspective, saying that it is fine to have our primary or generalized care delivered by part-time cardiologists, part-time gynecological surgeons, part-time endocrinologists, and that's just fine. And when they don't have enough business for the well-honed, well-trained specialty or subspecialty, they will deliver some geriatric care or pediatric care or some prevention services along the way.

Many of us in the business of health policy analysis would disagree with that as a way to run our system. Yet without that being a national policy, we are drifting toward that. And it is not hard to discern why it is happening. If one looks at the systems of reimbursement in practice or the systems of recompense and incentives within graduate medical education, certainly if one looks at the culture of medical training, all the incentives, as well as much of the prestige, have developed over time in favor of specialization.

These are not pernicious factors. We all are entertained by the technology that our country has been good at producing. And it is no accident that for medical students, the lure of high-tech is there, too.

In addition, there is what I would call the reductionist lure; that is, as a physician, the notion of trying to master science and human biology in all its aspects is daunting, and more daunting as the years go by with amassing information. The idea that you could be a competent specialist who was familiar with literature and was at the peak of your craft in a limited organ-specific approach to human biology is something that appeals to many as well.

You put the reimbursement systems, the cultural aspects that I have described of medical training, the high-tech lure and the reductionist draw all together, and you get a system that is marching inexorably toward the Balkans of health care.

That affects rural health very appreciably. Because as we look at the figures relating to what our students tell us, and then as we look as they move into residency years at what the match is now telling us, more and more are opting away from family medicine, general internal medicine, and general pediatrics. That augers worse things for the future, since that of course is the future.

Now what can be done about this primary care quandary? We have talked about an eight-plan in the Bureau which we have circulated in a number of circles which represents in large part marshaling and refocusing ideas and instruments that are available currently.

Just to tick them off, it's the National Health Service Corps; Primary Care Residency Training; Minority Health, and focusing on minority health; it's a service-linked component which is Area Health Education Centers, Geriatric Education Centers; it is non-physician providers, a very important role; and it's public health practice, linking traditional public health systems to primary care service systems, and not having two separate parallel and non-communicative systems out there as we do in many communities; and it is primary care research, rural health care research, a very important aspect.

Finally, and the point I really want to close on, is something that we have entertained a discussion within the Department on, and that is the link to HCFA. Health care financing is key to where we go on both practice and education. For those not aware of this, the funds that the Bureau of Health Professions has in the whole area of health professions, particularly dealing with primary care, are about \$150 million. HCFA this year will spend \$4.7 billion on graduate medical education, with a little bit of that going to nursing and allied health.

Until we build a bridge between those two concepts, the policy focus of primary care, and the large engine of funding in HCFA, we will have a hard time changing the culture in this country which impacts rural health very badly in terms of how we move peoples' minds and bodies into rural areas for the provision of health services.

Thank you, and apologies for going red.

[The prepared statement of Dr. Mullan follows:]

PREPARED STATEMENT OF FITZHUGH MULLAN, M.D., ON PRIMARY CARE AND THE
FUTURE OF HEALTH CARE IN AMERICA

The views expressed in this paper are strictly those of the author. No official support or endorsement by the Department of Health and Human Services or any of its components is intended or should be inferred.

The term primary care is used in two important but distinct ways. The first is to describe the provision of generalist services in health care usually provided by family physicians, general internists, general pediatricians, nurse practitioners, or nurse midwives. There have been many definitions of the term, but most center on the generalist nature of health and medical care services and their applicability to the vast majority of problems with which patients present.

The second use of the term primary care centers around a set of programs designed to provide health care for traditionally poor, isolated, or underserved populations. The Federal Community Health Center Program, the National Health Service Corps, the Indian Health Service, a variety of rural health programs, and a number of state or locally financed access projects tend to focus on primary care—meaning access to basic health and medical care for populations who have difficulty in obtaining such care.

Both of the uses of the term primary care and, indeed, the two sets of clinical activities that they describe, derive from common training programs, common clinical skills, and a common set of practitioners. Put simply, the infrastructure of training programs and the clinicians that deliver general primary care in the United States as a whole are interrelated with the subset of programs and practitioners whose work focuses principally on serving the disadvantaged. Therefore, any analysis of the potentials or problems inherent in these primary care paradigms must take into account both aspects of primary care as we know it.

THE DIAGNOSIS

In the period following World War II, the U.S. medical care system was still principally one of generalists with almost two-thirds the practitioners counting themselves as GPs. Today that statistic is reversed with roughly two-third of currently practicing physicians counting themselves as specialists or subspecialists. Two countries similar to ours in culture and general health status, Canada and Great Britain, have generalist physician cases today of 50 and 70 percent respectively.

Moreover, we can anticipate an erosion in the primary care infrastructure of this country as evidenced by the declining numbers of students indicating an interest in primary care (35 percent in 1989 compared to nearly 40 percent in 1991)¹ and subsequent drops in the National Resident Matching Program match rate in primary care disciplines. In family medicine, the match rate has declined from 85 percent in

¹ Association of American Medical Colleges. AAMC Data Book, Washington, D.C., January 1990.

1984 to 65 percent in 1991.² Even as we graduate more medical students, the lure of specialization draws young physicians away from the practice of primary care. Two-thirds of the increased numbers of internal medicine residents in the 1980s, for example, chose subspecialties rather than general internal medicine.

VITAL SIGNS

Not surprisingly, the problems with the general infrastructure of primary care are reflected among those primary care programs striving to provide access for disadvantaged populations. In a recent survey, forty-five of the fifty Governors indicated that primary care manpower was a significant problem in their States. Primary care physicians in rural areas were particularly problematic.³ The federal health professions shortage area (HPSA) designation system measures primary care manpower shortage areas throughout the country and tracks on the number of physicians needed to bring these areas to a minimum staffing level. With the help of the National Health Service Corps, that physician deficit diminished slightly from 4,500 in 1984 to 4,100 in 1988, but has begun to climb again and is now at 4,200.⁴

PRESCRIPTION

If one believes, as many policy makers do, that a system of health care firmly built on a foundation of generalism is the most effective way to provide excellent, broad-based services at a reasonable cost to all of our population—disadvantages and not disadvantaged—the reversal of the erosion in our system of primary care training and practice is essential. Improving the status and opportunities for primary care teaching in medical schools is important. Augmenting the reimbursement for primary care services as proposed under the resource-based relative value system (RSRVS) is critical as is a general strengthening of the continuum of primary care teaching, training and practice.

In the Health Resources and Services Administration of the Public Health Service a series of ideas has been discussed as part of an overall strategy to provide increased support and focus attention on the primary care needs of the nation in regard to both access and infrastructure. The linked concepts are as follows:

1. **NHSC:** A continued vigorous National Health Service Corps with a revitalized scholarship and loan repayment program targeted at the hardest-to-staff underserved areas.
2. **Minority:** A continued emphasis in federal funding for programs aimed to prepare and train health professionals from minority and disadvantaged backgrounds.
3. **Research:** A growing program of research in primary care funded principally by the Agency for Health Care Policy and Research.
4. **Training:** Continued support for primary care graduate medical education, but with priority placed on programs that provide explicit preparation for work with underserved populations.
5. **Service-Linked:** A continuation of service-linked educational programs such as Area Health Education Centers, Geriatric Education Centers, and AIDS Education and Training Centers with a similar increased emphasis in program training activities dedicated to primary care providers for work with underserved populations.
6. **Non-Physician Providers:** The continued support and more clearly delineated role for non-physician providers in the delivery of primary care services.
7. **Public Health Practice:** Increased emphasis on training for public health practice that will link the work of public health practitioners to the provision of primary care services.
8. **Linkage with the Health Care Financing Administration:** HCFA, in its administration of the Medicare trust fund, will spend 4.7 billion dollars on graduate medical education in 1991. Despite recent efforts of HCFA to increase reimbursement for primary care training, this money is policy-neutral and does nothing to address the primary care erosion phenomenon. A collaborative undertaking between HCFA and the Public Health Service in support of primary care training activities could bring an important new emphasis and source of support to efforts to improve primary care teaching, training and practice.

² National Resident Matching Program, NRMP Data: April 1991. Evanston, Illinois, April 1991.

³ U.S. Department of Health and Human Services, *States' Assessment of Health Personnel Shortages, Issues, and Concerns*. DHHS. Publication No. HRS-P-OD 90-6 October 1990.

⁴ U.S. Department of Health and Human Services. HRSA's Long Range Action Plan: Report on Access to Primary Care for All. Report to the ASH, June 7, 1990.

A final area in which the primary care community as a whole could be more effective is that of self-representation and problem articulation. Primary care needs an organizational apparatus that will enable family medicine, general internal medicine, general pediatrics, nurse practitioners and nurse midwives to talk to one another and speak to the world as a whole on certain key, common issues. Absent a potent and unified voice from the primary care educational and practice communities, efforts to improve access or rebuild the infrastructure will be far less effective than they might be otherwise. A common forum for discussing ideas and making opinion and preference known would be an enormous step ahead for family medicine and primary care as a whole. One might hope that a forum of this sort would be developed in the near future.

STRATEGIES FOR PROMOTING PRIMARY CARE TRAINING AND PRACTICE IN RURAL AREAS

The continuing shortage and ongoing erosion of primary care professionals hits rural areas particularly hard. Data from the AMA suggest that while the number of physicians practicing in metropolitan areas will increase 24 percent between 1987 and 2000, their numbers will increase by only 17 percent in rural areas during this same time period. Historically, rural practice has held little attraction to physicians trained in facilities and with technology that are separated from rural practice by more than just miles. The professional isolation and limited opportunities for continuing education associated with rural areas practice is another disadvantage to rural practice. These attitudes can change, however, with educational experiences for health professionals which include such elements as primary care-oriented undergraduate curricula, rural preceptorships and residency rotations and other types of decentralized educational models.

The overall strategy outlined in the eight concepts described earlier are implemented through a number of programs sponsored by the Health Resources and Services Administration which are having a very positive impact on health personnel resources in rural areas by addressing the disincentives to rural practice. Notable among these programs are:

The National Health Service Corps (NHSC), through service obligation related to its scholarships and loan repayments, has served as a resource for the placement of primarily physicians, but also nurse practitioners and physician assistants, in the highest priority shortage areas, many of them in rural areas. Since 1971, the NHSC has placed more than 16,500 health professionals in shortage areas. About 70 percent of the NHSC assignments to shortage areas have been to rural areas. NHSC surveys indicate that about half of assignees remain in their designated areas during the year after their obligation is completed.

The Area Health Education Centers (AHECs) establish networks of health-related institutions to provide educational services to students, faculty, and practitioners. The purpose of this program is to attract and retain primary care professionals in shortage areas by linking academic health sciences centers with clinical sites in underserved urban and rural communities. Many AHECs also provide a vehicle for continuing education for health professionals in remote communities. An evaluation of AHECs has shown that the professional environment is improved because of improved access of physicians in rural practice with professional resources.

Health Education and Training Centers (HETCs), like the AHECs, are designed to improve the supply, distribution, quality and efficiency of personnel providing health services in areas of particularly serious need, for example in the border areas between the United States and Mexico, as well as urban and rural areas, including frontier areas.

Rural Interdisciplinary Training Grants fund programs to train health care practitioners in a variety of disciplines, to provide services in rural areas, and to improve access to health care services. Unlike the AHECs, an administrative structure for this linkage is not specified. The key elements of innovation and the inclusion of multiple disciplines are also departures from the AHEC model. Another important difference is that physician training is de-emphasized, these programs limit training of physicians to fewer than 10 percent of all trainees. A number of the programs funded under these grants offer educational opportunities, which among other benefits, addresses the problem of professional isolation.

In addition, the Bureau of Health Professions supports training programs for physician assistants, nurse practitioners, nurse midwives, and nurse anesthetist, all vital to increasing primary care services in rural areas.

Also, a number of training grant programs have incorporated service-linked educational opportunities, though, regrettably, so far none have included service in rural areas.

RURAL HEALTH CARE—HIGHLIGHTS

Sixty-five million people, about one-quarter of the U.S. population live in rural areas.

While 23% of the U.S. population reside in nonmetropolitan areas, only 13.2% of the patient-care physicians, 6.7% of hospital-based physicians, 15% of registered nurses, and 13% of physician assistants practice in these areas.

Of the more than 3,000 counties in the U.S., 114 had no active patient-care physician. All of these counties were in nonmetropolitan areas.

As of March 1990, 70% of Health Professional Shortage Area designations for primary medical care were in nonmetropolitan areas (1,364 of 1,956).

In 1988, there were 98 primary care physicians per 100,000 population in the U.S., compared to only 56 per 100,000 in rural areas. In the District of Columbia, there were 192 primary care physicians per 100,000, while in the rural portions of Alabama, Tennessee, and Louisiana there were fewer than 45 per 100,000.

Between 1987 and 2000, a 24 percent increase in physicians in metropolitan areas is projected, compared to only a 17 percent increase in nonmetropolitan areas.

In 1985, 30% of all Physician Assistants were practicing in rural areas. In 1990, only 13% were doing so.

The shortage of registered nurses in 1990 in rural areas is estimated to be 45,382. In the year 2000, it is expected to be 76,760.

Between 1981 and 1988, 188 rural hospitals closed, 48% of all hospital closures.

Mr. HUMAN. Thanks, Fitz. We are using the timer this morning, because we want to protect the time for audience comments. So we are going to try to keep relatively close to 10-minute presentations.

Let me now introduce Dr. Tom Bruce. Dr. Bruce is a Senior Program Director for the W.K. Kellogg Foundation of Battle Creek, MI. Dr. Bruce helps the Foundation develop and administer its health programs. He is the former Dean of the College of Medicine of the University of Arkansas. While he was there, his principal emphasis was on expanding the family medicine program and other primary care programs. His major career interests have been to improve the distribution of physicians and the quality of medical education.

Dr. Bruce co-authored an excellent book called "Improving Rural Health: Initiatives of an Academic Medical Center." I notice he has it with him this morning. Maybe he will show it to you.

But since he might not, I will—it's the first book I read when I assumed the position of Director of the Office of Rural Health Policy. I thought it was terrific, and I still feel that way. I recommend that any of you who are interested in this general area read it as well.

While Dr. Bruce was trained as a cardiologist, I think anyone in rural health or anyone who has read the book will tell you that he has the soul of a primary care physician. Dr. Bruce?

**STATEMENT OF THOMAS A. BRUCE, M.D., PROGRAM DIRECTOR,
W.K. KELLOGG FOUNDATION**

Dr. BRUCE. Thank you, Jeff. I am going to depart from my prepared remarks. They are available at the back table. I will give you a "chalk talk" on my personal thoughts about rural health care and in particular, the role of universities and academic health centers in promoting rural health.

I think it's very clear that those people who come out of health professions training want to be good clinicians and caregivers. And they do everything they can to move in that direction.

If they move into an environment where there are not resources for them to use their professional talents, and to link with other

caregivers, to control their lives a little bit in terms of caring for the people to whom they are committed, they are going to move away and find another place where they can invest their talents in working with people in need. That's the very nature of health professions and why people go into it in the first place.

The problem of rural health in our time is that the system is out of sync and is distorted. Many people who go into rural health care have to go as missionaries. They go at tremendous personal cost, family cost, and professional cost.

In fact, if you look at professional attractions, all the weight tends to fall into more metropolitan settings, where one can join colleagues—other professionals who can round out group practices, be available for referrals, for discussion about complex issues, where one can get various kinds of technological support services for diagnosis and treatment, and access to the sophisticated support systems we have set up in this country for delivering health care.

In addition to the treatment of illness, health promotion is very heavily concentrated in metropolitan areas. The reasons why people choose to go into rural areas, therefore, tend not to be professional, but personal. They want to find a town in which their children can grow up, or the lifestyle is one that is consistent with one they have known before, in their own childhood or in an earlier experience.

Many times that decision to move into a rural community or health practice is disappointing because the system is not in place to support the professional needs they encounter, their desire to provide good care and quality care to the people who live there.

And though I am talking primarily today about the role of the university and what it can do to improve rural health services in this country, I think it's very clear that this is but one piece of a mosaic, and that there are many pieces outside the control of universities and academic health centers which also need to be addressed.

I think Fitz Mullan's discussion of the powerful importance of reimbursement for care delivered, and the capacity of rural communities to develop other kinds of economic support systems, transportation, education, and communications—all these are terribly important parts of the whole.

If one, then, focuses on the role of the university or of academic health centers, I think it's fair to say that not much has been done to marshal the resources that are available to support the needs for rural citizens in this country. And there is a very clear reason for that, several reasons. One is that there is very little incentive for academic health centers to move in that direction.

The resources that come from public funds to support health professions education tend to be only a small fraction of what it costs to run an academic health center—10, 15, or maybe 20 percent of these funds come from the public coffers. In today's world, the largest source to funds of run a program come from earned income through care of patients, or through research grants or other kinds of special program support. There is very little incentive to motivate an academic health center toward more responsiveness to rural issues.

If there is movement in that direction, it is sociopolitical forces outside the institution that causes it to respond. There are, in due fact, people knocking on the door saying "I want a nurse, a doctor, or pharmacist in my town." And the institution tries to be responsive. But the big system tends to push it in the other direction, towards the fragmentation and specialization of that Dr. Mullan described so very well.

In fact, we have had enormous success in this country since World War II in addressing some of the very difficult medical problems we faced, and we've made enormous headway in our understanding of disease, the mechanisms of better health, and of promoting health. Much of that progress, however, is technology-based. This once again tends to push the system towards the highly specialized and technologically sophisticated systems that are most adapted to metropolitan areas.

How is one to change the system? I think there are four areas that are the key to mobilizing academic health centers to address rural health issues. One clearly lies in recruitment, choosing the kinds of people that come into the educational system who have high likelihood of future rural practice.

"Rural," of course, is an extraordinarily broad category. If one is trying to respond to a rural area that is heavily populated by minorities, that is heavily agricultural, that has a high concentration of people who are elderly, or that is a very sparsely populated area. There are many kinds of rural responses that are needed.

If a local institution tries to respond to its own kind of rural communities, then it needs to pull those people in who have those kinds of sensitivities from the very beginning, making them a solid core of the student body. The institution will be far better able to meet its societal expectations by developing some probability of success in the kinds of students who come into the system.

Therefore, careful selection and early, aggressive recruitment become very important indices of the eventual outcomes, and one can generally predict whether there is probability that the graduates will go into rural practice at one time or another.

The second major area in which academic health centers can make significant headway is what I call the early socialization of learning to be a professional caregiver. That first professional identity is very much key to how one thinks of self as a practitioner.

If the whole environment is that of intensive, highly specialized care, then in fact that is going to be the outcome, even though you bring in people who are interested and sensitive to rural needs. If the whole environment is absorbed with a high-tech approach, then the rural mission is going to fail.

This professional socialization is keyed on the kinds of faculty one has, the sites where programs are delivered, the extracurricular activities that are available, and the way in which one brings in family, spouse, and others into the educational arena. I believe that if academic health centers are given the challenge to put together a package of things that will promote rural emphases and outcomes, they are capable of doing that. But it requires a very systematic approach.

The third major area of endeavor is the curriculum itself. This is probably the least important of all, but we always put it in, be-

cause that's what makes an academic health center. If I wanted to be an expert in cardiac intensive care, I would not take most of my training in a rural primary care center. That would be dumb.

I can tell you also that if I were interested in rural primary care, I would not take most of my training in a university hospital and its series of intensive care units. That also is dumb, because there is no major relevance there to rural issues, and the faculty don't have the skills, knowledge, and know-how to practice in rural settings—to network with other providers, to harness the resources that a rural community brings, and its unique kinds of characteristics.

All those things should be learned as a part of professional training, and the curriculum allows you an opportunity to do that. Rural medical education is not a preceptorship at the end of training; it's not an elective in community health!

And the last piece that academic health centers can do is provide technical assistance. Rural communities are not uncommonly areas of trouble, and academic health centers often have major resources for consultation and advice, technical advice to improve the systems. We don't utilize those university sources nearly as well as we have in the past.

One final word particularly relates to the discipline of medicine. That is that the post-doctoral years, so-called residency training, often are the real key. Many people can come through basic professional training in medicine or nursing, and then go into the clinical years of practical training and get totally lost, particularly when that system is overwhelmingly dealing with intensive, tertiary hospital-based care. The financial support for primary care residency education needs to be tied to where that training is to occur.

Perhaps one of the best programs of community-based learning of medicine in the world is in Israel, in the Beersheba Medical School in the Negev Desert. They do a superb job of teaching the skills, attitudes, and knowledge needed to practice community primary care. Graduates leave there, however, and go into traditional residency programs that are hospital based (there are few other options), and virtually none of them wind up doing what they were trained to do in medical school. That last post doctoral medical training is critically important if one is to develop a systems approach toward change.

The last thing I would say is that interdisciplinary teamwork is so important when we look to the future. Nurse practitioners, nurse midwives, and physician associates/assistants must be allowed to become a part of the team in a first-rate way if rural needs are to be met. This has to be quality care and they have to be reimbursed and treated as genuine professionals in the total sense of that word. We must take a systems approach to dealing with rural health care and to the educational parts of that whole.

Thank you.

[The prepared statement of Dr. Bruce follows:]

HEALTH CARE FOR THE RURAL ELDERLY

Ladies and Gentlemen: I am Thomas Allen Bruce, a physician in the employ of the W.K. Kellogg Foundation in Battle Creek, Michigan. Prior to joining the Foundation in 1985, I was Dean of the College of Medicine at the University of Arkansas

for Medical Sciences (Little Rock), where I directed a statewide rural recruitment/retention initiative. It was during this time that I became concerned about the poor preparation which health professionals often receive for practice in a rural setting. The results of that 10-year effort were published in a book, *Improving Rural Health: Initiatives of an Academic Medical Center*, W.R. Norton and T.A. Bruce, Rose Publishing Company, Little Rock, 1984. Please know that in providing testimony before the distinguished members of this Subcommittee, the thoughts which I share are entirely my own, and not those of the Kellogg Foundation or the University of Arkansas.

The United States of America has made enormous progress since World War II in biomedical research—both in our understanding of the causes of disease and disability, and of the factors which promote good health. In many instances a considerable dependence on technology and on highly specialized training and practice has resulted from these efforts. In keeping with longstanding custom in rewarding those whom we most appreciate, the advanced medical/surgical specialties have been accorded considerable public esteem, as well as professional and financial recognition and rewards. Over time this emphasis on "high-tech medicine" has had an enormous impact on the career choices of most new medical and nursing graduates.

Careers in general and family practice, general internal medicine, and general pediatrics (the so-called primary care disciplines) have become increasingly uncommon over time—from over 37 percent in 1981 to around 20 percent this year. And yet these are the practitioners which are of greatest need in rural and inner-city areas where out most needy citizens reside. Although health professions schools are not the prime cause of this malady, in my view they can play a much more effective role in turning it around. Insofar as it is possible, public institutions should attempt to reflect society's needs in their graduates. It is quite common today for institutions of higher education to be more responsive to the interests and aspirations of their students than to the needs of the communities which surround them. Saying so, however, does not make this an easy task, and quite a number of universities are struggling with what approaches should be taken to address the maldistribution.

It is my conclusion that health professions schools that wish to address societal needs should direct their educational and training programs to meet those needs. Schools which provide for underserved rural and inner-city areas should target a substantial portion of their admissions from those areas, and should build into the curriculum a significant amount of orientation and learning that is pertinent. Likewise, schools that serve large minority populations should make increased efforts to recruit and educate their students for such service. And those institutions that have sizable elderly populations in their catchment areas should attempt to build the capacity of their graduates in geriatric care.

In medicine, getting it right only in the basic predoctoral educational programs is not enough, since all graduates must complete an additional three or more years of clinical (residency) training before entering practice. This is where the lure of high-tech medicine is most appealing, for it becomes obvious to the new graduates that with specialization comes the chance for in-depth diagnosis and therapy of difficult problems, and those practitioners who choose to remain generalists will not have the ability or the opportunity to resolve complex illnesses. We need a value system that says it is OK, perhaps better, to provide primary, general care at the community level.

What can the Congress do about the maldistribution of health professions graduates? Above all, stand firm in readjusting the financial systems for medical reimbursement. Physicians, dentists, nurses, and other health professionals who provide care in highly needy areas and to underserved populations should be rewarded with higher pay, not less. Nurse practitioners, nurse midwives, and physician assistants should be reimbursed appropriately for being members of the primary care team. That will provide the carrot.

The Congress can encourage health professions schools to readjust their approach to the selection of students, and to provide a significant fraction of the curriculum outside the tertiary, intensive-care settings of the hospital—particularly in the earliest, most impressionable years of professional development. The nation's Medicare and Medicaid programs should move to support a level of postdoctoral residency education/training that is in proportion to the needs of the impoverished and elderly citizens that are served by those governmental programs.

Quite obviously there are many other fine tunings of the systems which will accelerate the directional changes that are the subject of this hearing. Nonetheless, I believe that these are likely to be the most powerful and effective initiatives that can be undertaken. Thank you for allowing me the opportunity to share some personal opinions in this increasingly important realm.

Mr. HUMAN. Thank you very much, Dr. Bruce. We turn now to well, Bruce Behringer has joined us. We will come to Bruce's presentation here shortly. But now, Mike Whitcomb.

Mike Whitcomb is a Professor of Medicine at the University of Washington Medical School, and formerly Dean of the Medical School. Mike also currently is a senior researcher for the Rural Health Research Center at the University Center, for which our Office provides some support.

He has formerly served on a State of Washington rural health commission, appointed by the legislature, that reported back a number of recommendations that were accepted and passed into law. And he has served as a member nationally of the Council on Graduate Medical Education.

Dr. Whitcomb is here today to report on his most recent research, a monograph that proposes some significant changes in Federal policy toward medical schools, and that ranks American medical schools comparatively on graduating physicians who then go out and serve rural America.

STATEMENT OF MICHAEL E. WHITCOMB, M.D., PROFESSOR OF MEDICINE, UNIVERSITY OF WASHINGTON, SEATTLE, WA

Dr. WHITCOMB. Thank you very much Jeff. It is very nice to be here. In the interest of time I will have to limit my comments. I have been asked by staff if I would not only make a couple of comments about the study we did, but also talk more specifically about the program in place at the University of Washington, the so-called WAMI program.

Let me say that I think one of the most important things that one needs to focus on if you want to deal with the problems of the supply of physicians and other health professionals, but particularly physicians, in rural communities is to recognize the order of the battle that Fitz Mullan has laid out. And that is, unless we do something to change the trend in medical student specialty choice and do something to increase the percentage of medical school graduates choosing careers in primary care medicine, we simply will not be able to address effectively the problems of health care delivery in rural America.

One statistic you might keep in mind is that in the last 6 years the number of U.S. medical school graduates that have chosen to go into specialties that might lead to careers in primary care—family medicine, internal medicine and pediatrics—has declined 20 percent. That's in the last 6 years. As Fitz said, we are losing the battle right on the front.

So my comments will really focus on how to engage the enemy, how you will, and what to do to try to change the kinds of selection medical students make.

I will comment about the importance of graduate medical education from several different vantage points in influencing student choices, but I want to make the important point that if we simply reorganize graduate medical education, look at ways of changing financing, we will not win the battle.

At the present time there are funded but unfilled positions in primary care residencies in all the primary care fields in this country.

try. The problem is not that there are not residency positions available for graduates of our medical schools, the real problem is that our graduates do not choose those residencies.

The message, you might gather, therefore, that I would like to bring you is that we really need to begin to direct more attention on the medical schools—the responsibilities of the medical schools to attempt to influence the career choices students make and to determine how to do that in an effective way.

With that as background, my colleagues and I at the University of Washington decided we would study the impact that the Health Professions Educational Assistance Act of 1976 had on medical students' specialty choices. We undertook that study, not because we were out to criticize the program, but because we wanted to understand whether or not the Title VII grants in existence were likely to represent an effective policy lever to change the environment of the medical school, and thus impact on medical students' specialty choices.

The conclusion we reached—and I will not bore you with the details of the study—was a resounding “no.” The fact of the matter is that if you look at the way the Title VII funds have been allocated and try to assess their impact on the specialty choices and practice locations of U.S. medical students, they have had a marginal, if any, impact during the period of at least 1976 to 1985.

And our concern was not what kind of residencies do students enter, our concern was what kind of practice they entered. Our measurement was of physicians going into primary care practices.

There are a number of technical problems with trying to do studies like this, but be that as it may, I think the facts stand for themselves. Between 1976 and 1985 the percentage of U.S. medical graduates who chose a career path that led them into practice in primary care remained virtually constant despite a large infusion of Federal dollars. From 1986 until the present, we have no way of knowing what students' career choices will be in terms of their practice, because they are still in the training pipeline. But I have already indicated the percentage that have entered the training pipeline that might lead to careers in primary care practice has declined by 20 percent.

So I think the fact of the matter is that we are losing the battle at that point.

That being the case—why is that? What is the explanation for why the infusion of Federal funds through the Title VII programs has not had a bigger impact? We think there are two primary reasons for that. One of them is that the Federal Government itself has had a conflicting approach to dealing with the problems of educating physicians. This is something that Fitz has already mentioned.

Let me narrow the data that he gave you, and simply take one particular year as an example. I will use fiscal year 1985 because it was the last year of our study.

If you take fiscal year 1985, the Federal Government provided to the major affiliated hospitals of the Nation's medical schools \$335 million to support graduate medical education. Most of that money was used to support graduate medical education to nonprimary care specialties.

During that same year, approximately \$23 million was provided through Title VII funds to support specifically primary care education, graduate medical education, in programs affiliated with the Nation's medical schools. That is a tremendous discrepancy in the amount of money and that's only Federal funds. And that's only the Medicare part.

Recognize also that the Veterans Administration is a very important source of funding for graduate medical education in this country. The VA sponsors approximately 10 percent of all GME physicians in this country, and there are virtually no GME positions in the Veterans Administration funded in pediatrics and family medicine, and a very small number funded in primary care.

So if you look at Federal policy as stated in 1976 by the Congress, it is that we should increase the percentage of U.S. medical students going into primary care. If you then look at what the Federal Government has done, the Federal Government has provided approximately a factor of 15 in terms of the amount of Federal funds used to support non-primary care graduate medical education in relationship to that supporting primary care.

So we have an inconsistency in Federal funding. It ought not to be very surprising then that the Title VII funds per se have not been a very effective policy lever. The reality is they have been competing with much, much larger sources of Government funds that were having an effect directly opposite of what the Congress intended in 1976. That's number one.

Number two, however, relates to the environment of the medical school, and what I will call the focusing and targeting of the Federal funds that are available through the Title VII grants. When we looked at the distribution of Title VII moneys and tried to determine whether on an individual medical school basis they were having an effect, we also could not demonstrate that.

There is a scatter graph. The amount of money given to medical schools that had the greatest increase in percentage of graduates going into primary care was less than the amount of money that went to schools that had the greatest decrease in the percentage of students going into primary care.

As one of my colleagues said, "That shouldn't surprise you, because there are some medical schools that are very good at writing grants and getting money. The real issue is, what's the commitment to the use of the funds for the purpose they were given." There one has to talk about the total environment of the institution, not the enthusiasm of the principal investigator that wrote the grant. I think the medical school environment is extraordinarily important.

As a second order analysis of our data, we simply took the top 25 medical schools and the bottom 25, ranked in terms of the percentage of their graduates going into primary care careers. There happened to be 25 schools in each group, and we simply did some simple analysis of information that was readily available to try to get some measure of the educational environment provided by those institutions.

What I will tell you I don't think will surprise many of you. The institutions that were successful in having graduates go into primary care were characterized by the following. First, they were

predominantly state medical schools, almost overwhelmingly State medical schools. Second, they tended to be State medical schools that were located in other than the Northeast.

Third, they tended to be schools that had emphasis in the development of departments of family medicine and the development of educational programs, community based educational programs, both at the undergraduate and graduate level, predominantly in family medicine.

They tended not to be research-intensive medical schools. They tended to be schools that were smaller in size and schools that had basic clerkship experiences for students outside the large tertiary care institutions that we associate with most of our medical schools.

Those that did not produce primary care physicians were private schools, Northeast, research-intensive, no departments of family medicine, no community based educational programs, students educated in large tertiary care hospitals that did not even have residencies in family medicine. If you look at that kind of simple analysis, it should not surprise you that the outputs of those schools would be fundamentally different.

We think that's an extraordinarily important observation, and ought to inform the thinking of people about how to deal with this problem, at least in terms of attacking the medical school environment.

Does that mean that all medical schools in the United States should suddenly change their spots and become community based schools? Obviously not. Does it also mean there is some inherent conflict between a school being a research-intensive school, which many, if not most medical schools seem to aspire to, and success in producing primary care physicians? The answer to that is also no.

There are four very research-intensive medical schools in this country that have an extraordinary, exemplary success story in having graduates go into primary care. The reason is because they have made the effort and commitment to develop programs to expose their students early in the curriculum and throughout the curriculum in community based primary care. You have heard Jeff mention the program at the University of Minnesota. I will mention just briefly the program at the University of Washington, and the University of North Carolina and Colorado also.

We don't think that schools necessarily have to change. We think they simply have to refocus some of their effort and recognize primary care as important, that ambulatory medicine training is important, make a commitment to that, and provide students the kinds of experiences that will give students a role, if you will, that they can see and may then aspire to. So the medical school environment is very, very important.

Let me just quickly mention the program at the University of Washington, the WAMI program. The University of Washington is a unique medical school. It serves as the medical school for the States of Washington, Alaska, Montana, and Idaho. That's one-fourth of the land mass of the United States.

The University of Washington is one of the most research-intensive medical schools in this country. It is consistently ranked in the top five among all medical schools in the receipt of NIH research

funds. Yet it also ranks in the top 10 among all medical schools in having graduates go into primary care.

Why? Well, part of that has to do with the area that is served and where students come from. But it is also because the school has made a commitment to impress upon all students that primary care is important. And that has been done through the WAMI program.

Can you educate students in a research-intensive environment and convince them of that? Well, the answer to that, I think, is no. But can you develop educational programs that somehow blunt the impact of the tertiary care center and research environment on students so that they do get a positive impression of primary care? The answer to that is yes. Students at the University of Washington are educated at places like Whitefish, Montana, Juneau, Alaska, and I could go on and on, and they are educated very well.

It simply is an example that there is no inherent conflict in the research mission of an institution and in the mission that would say we think we ought to do something to contribute to solving the problem of societal needs, and therefore create educational programs that will be important to providing appropriate role models for students.

So I think the answer is that we really need to have a strategy for dealing with this problem which addresses the issue from a number of different vantage points. Graduate medical education has to be reformed in ways that are more supportive of the effort, but before we begin to deal with that problem, or maybe while we are dealing with it, we must recognize the importance of the medical school environment, and all the factors that relate to that.

I think in the interest of time I will stop there. Thank you.

[The prepared statement of Dr. Whitcomb follows:]

TESTIMONY OF MICHAEL E. WHITCOMB, M.D.

Mr. Chairman, members of the Committee: I am Dr. Michael Whitcomb, Professor of Medicine at the University of Washington in Seattle. In order to place my comments in context, I should also mention that I have served as Dean of the Schools of Medicine at both the University of Washington and the University of Missouri in Columbia. I was also a founding member and served for three years on the Council on Graduate Medical Education, the body which advises the Congress and the Administration on physician manpower issues. I appreciate the opportunity to participate in today's workshop.

I have been asked by staff to comment on two different subjects, both related to my own work and experience in dealing with primary care medicine manpower issues. First, during the past year, working with colleagues associated with the Rural Health Research Center at the University of Washington, I conducted a study of the impact of federal funding for primary care medical education (Title VII funds) on medical students' specialty choices and practice locations. I will summarize some of the conclusions we reached as a result of our study that are relevant to today's workshop. Second, I will then describe briefly some aspects of the University of Washington's Regional Medical Education Program—the WAMI Program. My comments about the WAMI Program should give you some insight into the kinds of programs that medical schools can sponsor to promote student interest in careers in primary care medicine. My comments will focus primarily on ways to promote student interest in careers in primary care medicine, not specifically careers in rural communities. I think it is important to recognize that unless we can increase the number of medical students choosing careers in primary care medicine, we will not be able to deal effectively with the problems of rural communities. My comments, therefore, are quite relevant to the topic being discussed in this workshop.

My colleagues and I became interested in studying the impact of Title VII Primary Care Medical Education Funds on the specialty choices and practice locations

of graduates of U.S. medical schools because of concerns about the declining student interest in careers in primary care medicine. During the past six years, the number of U.S. medical school graduates matching in specialty residencies that might lead to a career in primary care declined by approximately 20%. Given the fact that there is an emerging consensus among manpower analysts that the percentage of students entering primary care should be increased if we hope to meet the needs of society, the experience of recent years is indeed alarming. The purpose of our study was to evaluate the impact of federal funding on student choices in order to gain insight into how the Title VII primary care grants should fit into a more comprehensive strategy to increase the percentage of graduates entering the primary care fields. Based on our study, we reached the conclusion that the Title VII funds are important primarily by providing support for family medicine programs but that in and of themselves they do not have the potential to reverse the current trends in medical students' specialty choices. There are a number of findings in our study that are relevant to this conclusion. In the interest of time, I will comment on only two.

The premise underlying the development of the Title VII grant programs was that the infusion of federal funds into medical schools and teaching hospitals in support of primary care medicine education programs should help change the environment of the institution in such a way that more students would see primary care medicine as a challenging and rewarding career and choose to enter one of the primary care fields. This, in fact, has not occurred. In our view, one of the most important reasons why the Title VII grant programs did not have the desired effect, is that the amount of money provided by these grants is dwarfed by the amount of money the Federal Government provides to support training in non-primary care specialties. This is a paradoxical situation, to say the least. Since passage of the Health Professions Educational Assistance Act of 1976, the Federal Government's stated policy on physician manpower has focused on the need to increase the supply of primary care physicians. Despite this policy, the Federal Government has been and remains the single largest source of funds supporting education in the non-primary care specialties. The Government funds that support non-primary care specialty training flow through the Medicare Program and the Veterans Administration. In 1978 the General Accounting Office called attention to this issue and recommended that Medicare and VA policies governing payment for graduate medical education be changed in order to be consistent with the government's manpower policy. Needless-to-say, this did not occur. Let me provide some numbers for you in order to put this issue in perspective.

In FY 85, Medicare provided approximately \$335 million to support graduate medical education in academic medical center hospitals. This small group of hospitals represents the major teaching hospitals of the nation's medical schools. In that same year, only \$23 million was provided through Federal Title VII grants to support graduate medical education in the primary care fields. Thus, Federal funding supporting primary care graduate medical education amounted to only 7% of the Medicare funds supporting primarily non-primary care specialty training. The Veterans' Administration is also an important source of funds for graduate medical education training. The VA sponsors approximately 10% of all GME positions in the country. Because of the nature of the VA medical system, the VA provides virtually no funding for GME in family medicine and pediatrics, and funds only a small number of residents in primary care internal medicine. Thus, if one combines Federal funds flowing through Medicare and the VA, Title VII dollars represent probably less than 5% of the total funds available to support graduate medical education programs closely affiliated with the nation's medical schools.

Under the circumstances, it should not be surprising that the Title VII grants have not been an effective lever for implementing Federal manpower policy.

In addition to the structure of the nation's GME system, the educational environment provided by the nation's medical schools is also important in influencing students' career choices. At present, there is a surplus of funded GME positions in the country. As a result, graduates of U.S. medical schools can, with few exceptions, choose the specialty of their choice. Each year positions in all of the primary care specialties remain unfilled. The number of unfilled positions has increased in recent years as student interest in primary care medicine has declined. Thus, one must not take the position that the problem that we face of an inadequate supply of primary care physicians can be addressed simply by changing the specialty mix of GME positions available in the nation's GME system. We must also be concerned about the reasons why students graduating from medical school have little interest in careers in primary care medicine.

We believe that there are two major factors that contribute to the level of student interest. One is the message that the educational environment of the medical school sends to students about careers in primary care medicine. Second is the message that the larger society sends to students. If students perceive that careers in primary care medicine are not highly valued, they will be unlikely to choose such a career. At present both the medical school environment and the larger society undervalue the importance of primary care medicine. If we hope to change the current trend in student specialty choices, both of these issues will have to be addressed. I will limit my comments to what we know about the medical school environment.

As a part of our study, we attempted to identify certain characteristics of the educational environment of medical schools which might be important in influencing student career choices. We compared a group of schools that produced a high percentage of primary care physicians with a group that produced a low percentage of primary care physicians. The observations that we made from this rather simple comparison were quite striking. Schools that produced a high percentage of primary care physicians were primarily state schools located in the South, Midwest, and West; were not research intense schools; were schools that had made a commitment to primary care medicine by establishing departments of family medicine and linking their educational activities with a number of family medicine teaching sites; and were schools that offered community-based education programs. In contrast, schools that produced a low percentage of primary care physicians were primarily private schools located in the East; were research intense; did not have departments of family medicine; and did not have community-based educational programs. These schools tended to educate students in large tertiary care teaching hospitals which did not even sponsor family medicine residencies.

We believe this comparison highlights the importance of the educational environment on students' specialty choices. If students attend a medical school where primary care physicians are seen as important role models, then some students will be influenced to choose a career in primary care medicine. If students do not get an adequate exposure to primary care medicine during their clinical education, it is not surprising that they will not choose to enter the primary care fields. We recognize that there are many other factors that may influence students' specialty choices; however, we think it would be a mistake to minimize the importance of the medical education environment provided by the medical schools on students' choices.

Let me make a connection between the two topics that I've discussed. First, we think that the Title VII grants are important. As I stated previously, we do not believe, however, that these grant programs alone can change the specialty mix of physicians in the country. As a part of a more comprehensive strategy for increasing the supply of primary care physicians, we believe that the Title VII grants should be focused on educational programs in family medicine. We focus on family medicine to the near exclusion of pediatrics and internal medicine because of the differences in funding patterns for these specialties. A note of explanation is in order.

In the modern medical school, budgeting of educational program activities has become a crude art. The majority of medical schools are not able to fund program activities from single funding sources. Instead, funds that are generated for one purpose are used in ways that allow those funds to also support other program activities. In this regard, research funds and clinical revenues are most important. Most of the non-primary care specialty departments are able to generate sufficient clinical revenues or research funds to subsidize other program activities of interest to the department. Family medicine departments, however, do not have the same capacity to generate external funds. Faculty in family medicine departments, by virtue of the nature of the specialty, are not able to compete successfully for federal research grants nor are they able to generate substantial clinical revenues. In order to remain viable, therefore, family medicine departments require other forms of subsidy. The Title VII grants have served this purpose. In fact, these grants along with similar kinds of grants from many states have been absolutely essential in the development and continued support of family medicine departments in medical schools across the country.

We have focused on family medicine because we think that continued support of family medicine departments and family medicine education programs is extremely important for reversing the current trends in medical student specialty choices. Our conclusion is supported by the observations that we made in our study about the characteristics that distinguish medical schools that produce a high percentage of primary care graduates from those that produce a low percentage. One of the most significant differences between these two groups of institutions is the commitment they have made to family medicine and the development of educational programs in

family medicine. In this regard, our observations confirm the conclusions reached by others that one of the most important determinants of whether or not students choose careers in primary care medicine is whether they are exposed to strong role models in family medicine educational programs while they are medical students. We think that the evidence supports this. Accordingly, because of the budgeting realities of medical schools, we would strongly urge that the Congress continue to support Title VII primary care educational grants but that the grants be focused more specifically on the support of educational programs in family medicine.

We believe that the environment of the medical school should be taken into consideration when making decisions about the allocation of the scarce resources that are available to support primary care education programs. Any funds that are allocated by the Federal Government to support primary care medical education should be directed to those schools that have demonstrated a real commitment to primary care medicine. This has not been the case in the past and is not the case at the present. We strongly urge that it become a fundamental part of policy in the future.

Let me now make a few comments about the Regional Medical Education Program at the University of Washington. The University of Washington Medical School serves as the medical school for four states in the Northwest Region—Washington, Alaska, Montana, and Idaho—thus the acronym WAMI. I will focus on those aspects of the program which are most relevant to the topic of this hearing. As a part of the program, medical students at the University may during their third and fourth years of medical school elect clinical rotations at community sites scattered throughout the four state region. These sites consist of community hospitals in smaller cities, the offices of physicians in large group practices, and the offices of physicians in solo or small group practices in small communities. As a result of this program, medical students at the University of Washington have an opportunity to be exposed to a variety of forms of community-based medicine. The experiences that the students have on these rotations are always very positive. Each year, members of the graduating class identify the WAMI experiences as the highlight of their experience at the University of Washington.

In my opinion, the program's importance goes well beyond the experience of individual students. This is an important point. I think that the program sets a tone for the school and sends a message to all students that the school believes that primary care medicine and community-based medicine is important. Has the program had an effect on students' specialty choices? I think so. The University of Washington ranks near the top among all U.S. schools in producing graduates that go into primary care medicine. This is a particularly remarkable record since the medical school is one of the most research intense schools in the country. The experience with the WAMI program argues strongly, I believe, that there is no inherent conflict in having a strong research program while maintaining a commitment to the importance of primary care medicine. The issue that is most important is whether the school presents primary care medicine in a positive way so that students get the message that careers in primary care medicine are valued. The WAMI program has done an excellent job of establishing that kind of environment within the Medical School and thus has had an influence on the career decisions that the school's graduates make.

I applaud you for the interest that you have shown in this extremely important topic. I hope that my comments have been helpful and I will be willing to address any questions that you might have.

Mr. HUMAN. Thank you very much, Mike.

Our last speaker on this morning's panel is Bruce Behringer, the Executive Director of the Virginia Primary Care Association, an organization of local medical practices, many of which receive Federal support in order to enable them to provide services to the poor and near-poor at discounted rates.

Mr. Behringer also is President-elect of the Board of Directors of the National Rural Health Association, the principal national advocate for better access to health care in rural areas of this country. He has been the Chairman of the National Advisory Committee on Rural Health. His whole career has been spent helping local rural communities meet their health care needs, and he has increasingly accepted the challenge of helping to develop national policy on solving these local health problems.

Bruce?

STATEMENT OF BRUCE BEHRINGER, M.P.H., EXECUTIVE DIRECTOR, VIRGINIA PRIMARY CARE ASSOCIATION, RICHMOND, VA

Mr. BEHRINGER. I wish I could tell you that I could solve the problem of the railroad train between Richmond and Washington. I apologize to you, Mr. Human, for being late. We spent an hour waiting for a new engine to arrive, we were stuck in the forests of rural Virginia.

I found it rather fascinating to be stuck in rural Virginia on a railroad train. I thought about the parallels between this meeting and the railroad ride. There is a tremendous amount of parallel in terms of being told we are making no progress and are in fact headed backwards in our attempts to get doctors to the station. The train ride is of course the production of physicians, primary care physicians who are willing to dedicate their service in rural areas of the country.

From the perception of somebody who tries to work with rural areas, I think that small communities and small towns across the country are beginning to perceive that there is something wrong with this railroad train, something wrong with the system. There seems to be fewer doctors arriving at the terminal. And they are not really quite sure who's driving the engine anyway.

I speak today on behalf of the National Rural Health Association, an organization of diversified membership that works with a large number of constituents in rural health, and the National Association of Community Health Centers, which represents about 300 community and migrant health centers across the country.

Both of these organizations' memberships are finding it far more difficult to recruit and retain health professionals in rural areas. It is become far more evident that the problem used to be "Well, it's just the people in poor areas, it's just undeserved areas, and it's just those frontier areas where we can't get anybody interested." And in fact, nowadays that's not so. It's becoming far more rural areas generically, rather than just the undeserved areas.

I have to thank Mr. Human for the opportunity to serve on the National Advisory Council of the National Health Service Corps Program a few years ago. In 1989 I was Chairperson of the council, and a number of people who are sitting in today's audience were very kind, very considerate and gave me their tutelage on how to understand the issues of rural health care and the production of primary care physicians in the country.

We found a number of things as we traversed the country and visited where National Health Service Corps physicians were serving. I think the predominant theme we learned during those 2 years was that many of the young physicians who were being placed to practice in rural areas did not feel comfortable there. They simply did not feel that their training provided them the types of opportunities that were necessary for them to begin to understand that rural medicine does not equate necessarily to second class medicine.

Just because a doctor is a number of miles from the nearest hospital and the multitude of multi-specialty physician practices who

were involved in training them in medical schools, they did not need to feel so isolated in the rural areas. In fact, if they had had some experience during medical school, many did not feel as isolated.

The Council found a number of different concerns, which I'm quite sure the other speakers have mentioned. First, there was a geographic maldistribution of physicians with too few physicians in rural areas. Second, there was a greater dependency on primary care physicians in rural areas. Third, 25 percent of the rural physicians in the country might retire in the next 5 years. They are of age to retire in the next 5 years.

Fourth, there is an undersupply of physicians in family medicine, in general internal medicine and perhaps—depending on what Congress continues to do in terms of insuring children in this country—the future supply of pediatricians could rapidly become only adequate. Fifth, as has been noted by the other speakers, there has been a decline in the preferred choice of primary care graduate training by medical students.

Perhaps the thing that amazed the Council the most as we went through our deliberations was the revelation of the massive financial role that the Federal Government plays in funding medical education. Any number that I would cite probably would be disputed by a dozen different people in the audience saying "No, that's too high, or that's too low." But the issue is that the Federal Government does spend a great deal of money on educating every medical student and resident in this country.

I suggest that if health professions manpower, particularly more primary care physicians, is what we need in rural areas in the country, and the reliance by those institutions and organizations that train health manpower is so great on Government assistance, it would seem a relatively easy task to identify a plan which could reward those institutions which meet rural America's needs by realigning the Government's current investments. This would recognize and require sorting out the multitude of studies and recommendations the Congress has received every year, and basically doing two things.

First, set policy goals, and strategically shift dollars, based upon some sort of a matter health profession needs assessment which recognizes rural problems. And second, coordinate the Government's current investments being made through the Health Care Financing Administration, the Health Services and Resources Administration, and the National Institutes of Health.

I will make four basic recommendations. I am not a physician, nor I have never been to medical school. If these appear rather naive, I apologize. However I think we are at the point where we need to start thinking from some of the basic principles again.

1. Reorganize Federal financial investments in Graduate Medical Education. Most residency training in this country takes place in urban hospital settings. It is financed through third-party payments to hospitals which recognizes both the direct costs of graduate medical education as well as the indirect adjustment incurred by the hospitals for sponsoring training programs.

HCFA pays billions of dollars through Part A Medicare payments for these costs. Since reimbursement is tied to hospital

charges, and primary care training must rely less on hospital based time. Support for primary care ambulatory training is much lower than for specialty training.

The net effect of all these HCFA formulas is to support more education and training of physicians in tertiary care, hospital based rather than primary care, community based experiences.

In order to address the rural manpower issues through GME, two basic principles must be adopted. First, we must want more residency training to take place in rural areas, and second, we must assure that rural ambulatory training programs get sufficient training dollars for their direct use.

Therefore two recommendations are suggested. The first is that graduate medical education reimbursement should be extended in order to underwrite the cost of training programs for medical residents and other health professionals at designated Federally Qualified Health Centers. These include rural community and migrant health centers. We recommend that Congress provide clear policy direction to HCFA through appropriate legislative history and otherwise that it views the current regulations as providing Federally Qualified Health Centers and Rural Health Clinics the authority to incur expenses for conducting and participating in approved teaching programs.

The second approach is to increase the direct and indirect reimbursement of small and rural hospitals in the training of physicians. The reimbursement needs to be dramatically improved in order for those small and rural hospitals to train care physicians to take care of the unique needs of rural residents. Moreover, these programs, particularly the Rural Hospital Demonstration Programs, should be open to rural ambulatory training sites.

2. Rethink the current lack of Federal investment in primary care research. Federal dollars have obviously not been quite as available for primary care medical faculty members; they have fewer opportunities to apply for and receive Federal grants because the amount of grants for primary care research is very small.

As an example, in 1989, the National Institutes of Health awarded \$5.5 billion in research grants of which only \$15.4 million or less than 1 percent could be classified as primary care research. Primary care based, community based research will provide much of the data needed on the availability and distribution of health professionals in rural areas, and the conditions and effectiveness of treating these conditions which are most indigenous to rural Americans.

The Congress should encourage the National Institutes of Health and the Agency for Health Policy and Research to give priority in awarding research grants to individuals and institutions who wish to conduct research in rural primary care based, community based settings.

3. Provide incentives to medical and other health professions schools that link with rural America. There is a paucity of health professionals who come from and return to rural underserved areas. Moreover, there is a lack of rural minority persons who are becoming health professionals. Medical schools which find it within their mission should be encouraged to adopt selective admission

policies to encourage those most likely to return to rural areas to enter their schools.

Federal financial incentives should be offered to make sure that all colleges of medicine have strong family medicine and primary care training programs, with strong rural components. Priority for Federal grants should be given to those medical colleges and universities and residencies that train and place primary care physicians in rural community based health institutions.

Interdisciplinary training programs are also key in rural areas. Reauthorization of the Title VII and Title VIII Public Health Service programs is scheduled for this session. These are programs directed at developing or revamping health professions schools to support interdisciplinary training and primary care oriented efforts. Consideration should also be given to Senator McCain's proposal to expand and revitalize the area health education centers program in this country to help targeted rural communities.

4. Provide incentives for health professionals to practice in rural areas. Congress has had, I think, a remarkable record of achievement in promoting programs to help those who wish to practice in rural and underserved areas—the National Health Service Corps program was reauthorized in 1990 with various financial incentives provided. This year, Senators Pryor and Packwood have introduced S. 1125, the Rural Primary Care Act of 1990, which would offer tax incentives to help rural communities attract and keep primary care providers.

Reimbursement for primary care services is also a major issue with regard to incentives. All current Medicare payment differentials which cause less reimbursement to rural physicians than urban physicians for the same services should be eliminated in all current Medicare reimbursement policies. Much of the hope that was generated by the passage of Medicare's resource-based relative value system has been discounted by many practitioners by the prediction that it is just becoming another cost savings effort rather than the promised fundamental shift in the increased valuation of the primary care services.

In conclusion, the National Rural Health Association and the National Association of Community Health Centers thanks you for the opportunity to express our ideas. It is in everyone's best interests—the rural areas, their health care providers, medical schools, health professions training programs, and the Congress—that we understand the solutions to this problem are known and attainable. It will call for cooperation and a sense of public accountability for allocating and using Federal finances.

Thank you.

[The prepared statement of Mr. Behringer follows:]

STATEMENT PRESENTED BY BRUCE BEHRINGER, M.P.H.

The trends are clear: In the future, small towns and rural areas with a high percentage of elderly and poor residents that already have too few physicians, many of whom are reaching retirement age, will be searching for new and replacement physicians. They will find a declining pool of primary care specialists and will have to compete in a reimbursement environment which rewards the choice of urban and specialty practice. This manpower issue is one key to the vexing debate over access to care throughout America. This is no simple problem nor there can be a simple solution.

Mr. Chairman and distinguished members of the Senate, my name is Bruce Behringer and I am the Executive Director of the Virginia Primary Care Association. I am pleased to be a part of this workshop and hope my comments will be helpful to you.

I am here to speak on behalf of the National Rural Health Association and the National Association of Community Health Centers. Both organizations have strong roots in rural communities and represent health care organizations which are struggling with the difficulties of recruiting and retaining health professionals in rural areas. These difficulties, most prominent in the past in medically underserved and isolated frontier areas of the country, are becoming far more evident in all rural areas.

In 1989 I was selected as the Chairperson of the National Advisory Council of the National Health Services Corps Program. This program is a Federal effort directed at preparing and placing skilled health professionals in the highest need areas in the country through offering financial incentives to students in return for service. During our site visits and interviews with the NHSC obligated physicians, the Council heard one clear message: many of them felt unprepared to practice medicine in rural areas, be it New Mexico, Montana or Alabama. Many had never been exposed to rural areas before, either personally or through formal educational experiences designed to allay their fears and show them that rural practice does not necessarily equate to second class medicine. They were sometimes quite distant from high-tech hospital facilities and the multitude of physician specialists who trained them in metropolitan areas. This feeling of isolation worked against them making commitments to stay in rural America.

Our Council further studied the medical education system which selected and prepared these physicians and found that for every one doctor trained in primary care, three are trained as specialists. If we had a shortage of specialists in this country that would be fine, but the national statistics and testimony we received indicated otherwise:

1. The Council on Graduate Medical Education (COGME) concluded that there is a geographic maldistribution of physicians, with too few physicians in many rural areas. Over 28% of the nation's population reside in rural areas while only 14% of the nation's physicians practice in rural areas.

2. There is a greater dependency on primary care physicians in rural America where 8 of 10 physicians are classified as primary care compared with 38% in metropolitan areas.

3. Twenty-five percent of rural physicians may retire during the next five years according to a national 1988 survey and 45% of all family or general practitioners in the U.S. are over 55 years old now.

4. The COGME report also concluded that there is an undersupply of physicians in family medicine, general internal medicine and, if health care coverage is extended to the substantial numbers of children who now lack it, the future supply of pediatricians could rapidly become only adequate or even inadequate.

5. The four-year trend of 1987-90 for the National Resident Matching Program showed declines in preferred choices of primary care graduate training by medical students.

Perhaps most astonishing was the revelation of the massive financial role that Federal funding plays in the medical education system. Though any stated percentage seems to be questioned, our Council heard that Federal funds of one sort or another pays for up to 75% of the cost of educating our doctors today. This is through various grants, research and payments for services for the publicly insured patient.

If health professions manpower, particularly more primary care physicians, is what rural America needs, and reliance by those institutions and organizations which train health manpower is so great on government assistance, it would seem an easy task to identify a plan which could reward those institutions which meet rural America's needs by realigning the government's current investments. This would require sorting-out the multitude of studies and recommendations from Federal agencies and advisory councils and doing two things:

First, set policy goals and strategically shift dollars based upon a master health professions needs assessment which recognizes rural problems; and

Second, coordinate the government's current investments by the Health Care Financing Administration, the Health Resources and Services Administration and the National Institutes of Health.

In my written testimony I have submitted a framework of the six steps involved in reaching a policy goal of increasing the availability of health manpower in rural America. At each step, there are strategies endorsed by various programs which have been shown effective in eliminating obstacles and creating opportunities for

medical education and rural area partnerships. Because of time limitations I will focus my recommendations on a few general areas.

1. Reorganize Federal financial investments in Graduate Medical Education.

Most residency training traditionally takes place in urban hospital settings. It is financed through third party payments to the hospitals which recognizes both the Direct costs of Graduate Medical Education as well as an Indirect adjustment incurred by the hospital for sponsoring the training program. HCFA pays billions of dollars through Part A Medicare payments for these costs. Since this reimbursement is tied to hospital charges and since specialty training programs traditionally generate greater in-patient charges, Federal support for primary care training programs is considerably less. Additionally, ambulatory training site costs, those more typically used by primary care residencies, are not considered in the Indirect adjustment.

The net effect of these HCFA actions is to support more education and training of physicians in tertiary-care, hospital based rather than primary care, community based experiences. In order to address the rural manpower issue through GME, two basic principles should be adopted. We must want more residency training to take place in rural areas and we must assure that rural ambulatory training programs get sufficient training dollars for their direct use.

Two recommendations are suggested. First, Graduate Medical Expenses (GME) reimbursement should be extended in order to underwrite the cost of training programs for medical residents and other health professions at Federally Qualified Health Centers. These include rural Community and Migrant Health Centers. Costs would include the salaries of residents and other health professionals; salaries of supervising physicians, nurses and center staff, overhead costs of both teaching staff and residents, as well as many other direct and indirect costs incurred by the center through involvement in a teaching program.

HCFA's reasonable cost reimbursement regulations, 42 C.F.R. 413, provide that the cost of educational activities are treated as allowable costs for purposes of determining reasonable cost. HCFA applies the 42 C.F.R. 413 cost principle to rural health clinics (RHCs) and is expected to apply these same rules to FQHCs both for purposes of Medicare and Medicare reimbursement.

We recommend that Congress provide clear policy direction through appropriate legislative history and otherwise—to HCFA that it views 42 C.F.R. 413 as providing FQHCs and RHCs the authority to incur expenses for conducting and participating in approved teaching programs. Congress should make clear that the agency's test of reasonableness must contain incentives for these centers and clinics to participate in teaching programs, and that these incentives include (but need not be limited to) adjustments of various productivity screens. Conversely, we recommend that Congress direct HCFA not to construct or apply tests of reasonableness that contain disincentives for FQHCs or RHCs to carry out teaching programs.

The second approach is increasing the Direct and Indirect reimbursement of small and rural hospitals in the training of physicians. The reimbursement needs to be dramatically improved in order for those small and rural hospitals to train primary care physicians to take care of the unique needs of rural residents. Moreover, these programs (particularly the Rural Hospital Demonstration Program) should be opened to rural ambulatory training sites.

2. Rethink the current lack of Federal investments in primary care research.

Federal research dollars have spawned untold numbers of emerging subspecialty departments within medical education. Academic prestige for medical school faculty and extra dollars for high visibility activities for subspecialty departments comes from research grants and published research. Primary care medical faculty members have fewer opportunities to apply for and receive federal grants as the amount of grants for primary care research is extremely small. As an example, in 1989, the National Institutes of Health awarded \$5.5 billion in research grants, of which only \$15.4 million or less than one percent could be classified as primary care research.

Primary care-based, community-based research will surely provide the much needed data on both the availability and distribution of health professionals in rural areas, and the conditions and the effectiveness in treating the conditions which are indigenous to rural Americans. The Congress should encourage the National Institutes of Health and the Agency for Health Care Policy and Research to give priority in awarding research grants to individuals and institutions who wish to conduct research in primary care-based, community-based settings.

3. Provide incentives to medical and other health professions schools that link with rural America.

There is a paucity of health professionals who come from and return to rural, underserved areas. Moreover, there is a lack of rural minority persons who become

health professionals. Medical schools which find it within their mission should be encouraged to adopt selective admission policies to encourage those most likely to return to rural areas to enter their school. Federal financial incentives, or perhaps even disincentives to schools which choose not to participate, should be offered to make sure that all colleges of medicine have strong family medicine and primary care training programs with strong rural components.

Priority for Federal grants should be given to those medical colleges, universities and residencies that train and place primary care physicians in rural, community-based health care institutions, whether they are hospitals, or other ambulatory settings like community and migrant health centers.

Interdisciplinary training programs are key in rural areas. For years the coordinated efforts of physicians and other health practitioners, including nurse practitioners, nurse midwives and physician assistants, have provided much of the primary health care in rural America. Reauthorization of the Titles VII and VIII Public Health Service programs is scheduled for this session. These are programs directed at developing or re-orienting health professions schools to support interdisciplinary and primary care oriented efforts. Consideration should also be given to Senator McCain's proposal to expand and ensure the capacity of Area Health Education Centers to include more health professions training experiences and exposure of students and residents to community-based primary care and underserved populations in rural and frontier areas.

It is unlikely that there will be a quick turnaround in the primary care physician supply and distribution crisis we face today. Therefore, we can anticipate an increased need for nurse practitioners, physician assistants, and nurse midwives who should be trained for primary care in rural areas.

4. Provide incentives to health professionals to practice in rural areas.

Congress has a remarkable record of achievement in promoting programs to attract those who wish to practice in rural and underserved areas. The National Health Service Corps Program was reauthorized in 1990 which included various financial incentives through scholarships, loan repayment, community programs and partnerships. This year Senator Pryor and Packwood have introduced S. 1125, "Rural Primary Care Act of 1991", which would offer tax incentives to help rural communities attract and keep primary health care providers. Tax credits would be provided to help provide incentives for health care professionals to serve the rural "medically underserved". And, physicians may be encouraged by the deduction of loan repayments under the National Health Service Corps Loan Repayment Program. The bill also offers an annual tax deduction of up to \$25,000 for basic medical equipment which may be an attractive incentive to help physicians set up rural health care practice.

Reimbursement for primary care services have long been recognized as being significantly less than for subspecialist visits and procedures. Add to this the current Medicare payment differentials which cause less reimbursement to rural physicians than urban physicians for the same service, it is easy to understand why rural primary care is one of the least attractive fields in medicine. Congress could eliminate all current Medicare reimbursement policies which continue differential payment between rural and urban physicians. Much of the hope which was generated by the passage of Medicare's Resource Based Relative Value System (RBRVS) has been counted by predictions that it is becoming just another cost savings effort rather than the promised fundamental shift in the increased valuation of primary care services.

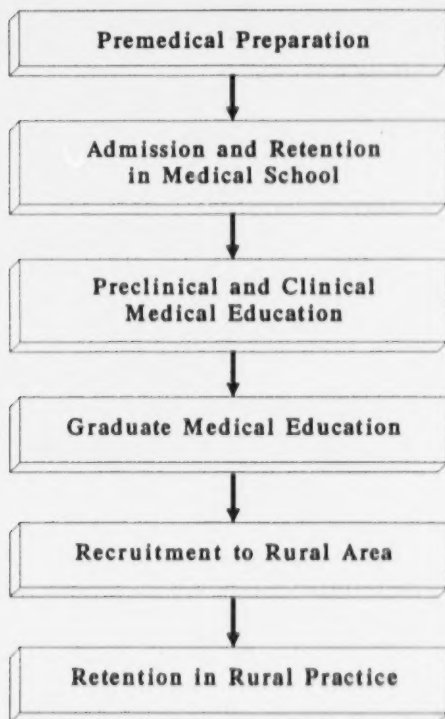
5. Require data on health manpower issues include analysis of rural issues.

Data compilation and analysis is critical in determining the appropriate number and kind of health care providers that meet the needs of residents living in rural areas. There should be compatible statistical data from state and federal agencies developed and maintained by the Health Resources and Services Administration. Specifically, the Congress receives a report from the Bureau of Health Manpower every two years on status of health professions. There should be a section on the status of health professions in rural areas.

Mr. Chairman, NRHA and NACHC thank you for the opportunity to express our ideas for linking medical education and training to rural America. It is in everyone's best interest, the rural areas, their health care providers, medical school health professions training programs and the Congress, that we understand that solutions to this problem are known and attainable. It will call for cooperation and a sense of public accountability for allocating and for using federal finances.

NRHA and NACHC stand ready to assist you and your colleagues in developing the most rational, innovative and effective programs to enhance the training, recruiting and retention of medical providers.

STRATEGIC THINKING:
Steps To Improve Rural Manpower Distribution



(VPCA 7/81)

Premedical Preparation

GOAL

To encourage applications from under-represented rural and minority residents to medical schools

STRATEGIES

To identify potential eligible applicants

To foster experiences and exposures to the health professions

To sponsor supplementary education and training programs

Admission and Retention in Medical School

GOAL

To increase medical school enrollment of rural residents and underrepresented minorities

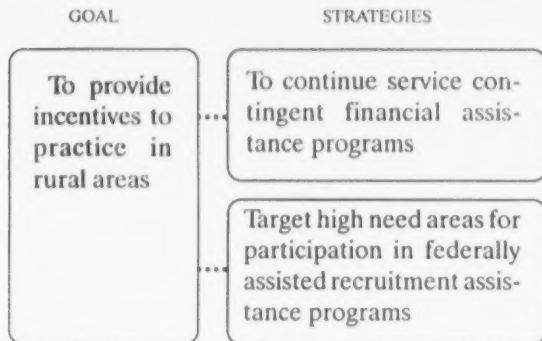
STRATEGIES

To initiate preferential admissions criteria

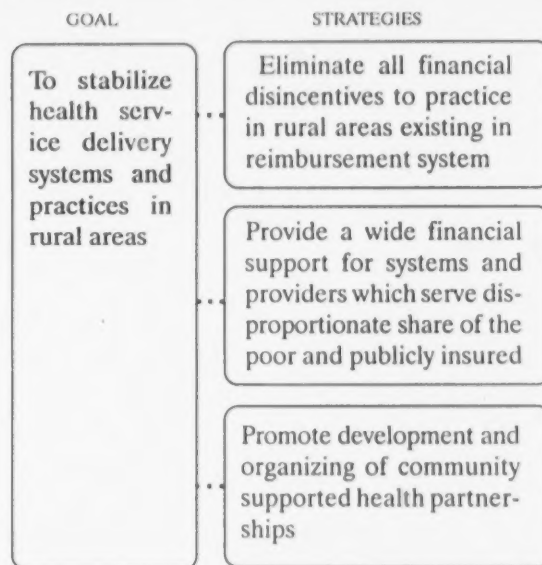
Support supplementary educational assistance and mentoring programs

Increase availability of financial aid and assistance programs

Recruitment to Rural Areas



Retention in a Rural Practice



Pre-Clinical and Clinical Medical Education

GOAL

To promote exposure and training experiences in rural practice

STRATEGIES

Enhance primary care faculty status and training

Curriculum revision to emphasize primary care

Institutionalize rural electives and rotations in curriculum

Graduate Medical Education

GOAL

To promote the development and maintenance of more rural based primary care residency programs

STRATEGIES

Reorient federal financing of GME to prioritize primary care training programs

Continue financial assistance for primary care residency programs with preferences for those with rural experiences

Reorient research dollars to promote involvement of primary care departments

Mr. HUMAN. Thank you, Bruce.

I want to thank all of our speakers this morning for the challenging recommendations they have offered and the excellent background information they have provided to inform our understanding of these issues. They have obviously prepared well and carefully.

What happens next is not a question and answer period, although questions from the audience are welcome and with luck, some of us will have answers. Or importantly, now that you have heard our speakers, I hope that you will help us and help the Senate Special Committee on Aging with your reflections, your ideas on medical education, on how Federal policy and other policy ought to be changed in order to bring about changes in the way we train physicians that will lead to more physicians ending up in rural areas.

My plan is to close this discussion at around 11:45, and to reconvene for our afternoon panel somewhere between 1 and 1:15. would expect to ask Charlie Cranford to begin to speak at 1:15 promptly. So once we do break for the lunch, I hope everybody will try to get back on time. I understand there is a cafeteria close by here, and there are other restaurants around, if the rain isn't too bad.

So at this time we are open to discussion. If you could, go to one of the microphones and introduce yourself prior to making your comment or asking your question. Thank you.

STATEMENT OF BOB WALDMAN, UNIVERSITY OF NEBRASKA

Mr. WALDMAN. I'm Bob Waldman, University of Nebraska. I have a couple of comments. First, Mike Whitcomb talked about marginal effects. Sometimes I think we discount marginal effects. I would like to describe briefly a marginal effect we have measured. We studied the fact that we have been giving preferential acceptance to rural applicants for about 10 years.

We studied the first 5 years of that and it turns out that it has had a marginal impact. It has increased—if we had assumed that instead of giving preference we would have given our usual acceptances, the difference has been two to five rural practitioners a year. Now, that seems like it's fairly disappointing.

Yet we have also calculated that that is about 25 percent of what we would need to correct the rural deficit in Nebraska over about a 10- to 15-year period. So it seems marginal, an increase of two a year doesn't seem like much. Yet if you add up four or five marginal effects, you can have a real impact.

My point is, don't discount marginal effects.

The second comment is with regard to what Mr. Behringer said. I think we must be careful about robbing Peter to pay Paul. If we assume that Federal funding is a zero sum game, which I think we have to assume, if we take money away from urban medical centers for the training of residents then we have possibly an unwanted effect, which would be that we would have elderly and indigent people in the cities who would not be getting health care. Because we know that medical centers provide a disproportionate share of the care for the elderly and the poor.

Similarly, if we take money away from the NIH budget to support primary care research, while that might be laudable, I think you would find a tremendous outcry in battle in the academic medical community, which I think would reflect badly in the halls of Congress. I think we might end up hurting ourselves, because I doubt if we could present a united front from all of academic medicine for such a proposal. I think if we don't present a united front, we end up hurting ourselves in the long run.

Mr. HUMAN. Thank you very much, Dr. Waldman. Mike?

Dr. WHITCOMB. I just want to make a comment to Bob's first point. I didn't mean to suggest that one should discount marginal efforts within individual institutions. The University of Nebraska is an institution which already has a background of producing physicians that go into primary care medicine.

I would suggest that if the same change had been made at Harvard, it would have had no impact whatsoever. I think it's a question of the environment in which the marginal changes occur. My reference was really system wide in that respect.

STATEMENT OF TOM SCHONGALLA

Mr. SCHONGALLA. Tom Schongalla, speaking for myself. I have watched this area for 20 years and I have one specific suggestion, knowing it is probably not politically acceptable.

With computer software today, you can really develop geographic information systems that show where everything is now. You can center even physicians by zip code. I would submit to you that if you actually look the situation may not be as bad as you think. In fact, a question I would like to get you to answer is, if dollars were no object, what would you want and what would you do with it and what would you produce?

I think somebody needs to put together a document that says for rural health, that for the 257 Congressional districts that are primarily rural, which is why you have a lot of clout, we can do this for you.

But I would like to give you a quick sample of the problem. I have looked at South Dakota. South Dakota has 57 hospitals. Nine of those hospitals are Federal or State, Indian Health Service, VA, or whatever. There are only three hospitals with more than 200 beds. Two of those are more than 400 bed. And they really take the bulk of South Dakota's resources. And they are high-cost providers. You could divide the money from the two 400-bed hospitals and provide a lot of services.

But the real problem is more than that. Fifty hospitals are under 100 beds and 35 are under 50 beds. You could cover that State well with 19 hospitals. You would have less than 40 miles to travel to get to any 1 of the 19 hospitals. You could cover the State with seven tertiary care medical centers, where you travel less than 100 miles. And I think the real problem is, how do you tell the other ones you don't need that they ought to be gone?

I have not looked in detail at those 57 hospitals with 50 beds, but if they are like my father's hospital in Idaho, I'll bet you a batch of them have one, two, or three physicians, and they really are not hospitals. I hope that's provocative.

care hospitals or medical assistant facilities with larger essential access community hospitals. If this kind of program succeeds, it is the kind of thing that could well be expanded to create a greater emphasis both on downsizing hospitals that are no longer needed and in providing the kind of networking you are arguing for, the kind of system connectiveness you are advocating.

I think it is too early to know if it is going to work, and what kind of price we will pay.

The other thing I would caution everyone about is, let's not make an inexorable connection between the idea that a big hospital is a good hospital, and a small hospital is a second-rate hospital. I don't think that's true. We have pretty good research that shows the quality of care in small hospitals in America as being good for the things that they logically should be providing. I feel that's an indictment we have to be careful we don't make.

Yes, sir?

STATEMENT OF DEAN PATTON, EAST CAROLINA UNIVERSITY

Dr. PATTON. My name is Dean Patton. I'm from East Carolina University in Greenville, NC. I direct the residency program there in family medicine. We are fortunate in our school to have about 20 percent of our graduates who enter primary care specialties from our school. Even with that, we are barely able to keep up with the attribution of primary care physicians in rural eastern North Carolina, even with those kinds of numbers.

Before moving to East Carolina 5 years ago, I was in private practice in southern West Virginia in a small town of about 7,000 people. I practiced there for 9 years before going to East Carolina.

It does take some missionary zeal to stay in that kind of practice, where the demands are constant and where when you compare the style of living you are able to have as a primary care physician in a community like that with those of the surgeons, the radiologists and other practitioners in that same town who work no more hours than you do, it is very discouraging. And people are leaving primary care specialties for those reasons.

As I moved to East Carolina and began to focus on training family physicians, we have experienced in the last 5 years that due to decreased interest in our specialty it has been very discouraging to try to conduct the family medicine training program in that kind of environment. Although as we look at ways of encouraging students to develop interest in primary care, I think we have done many of the things that have been suggested at East Carolina. We have enjoyed some success with that.

But our residents are now looking at lifestyle issues. Our residents are looking at what they are going to do when they get out of their residency training programs, and are they willing to make that sacrifice—and it's a real sacrifice—to go into rural America and practice in rural America.

Recently the Senate voted themselves a hefty pay raise. One of the arguments I read in our paper was "Well, the House had already done it, and why should they be making any less money than the people in the House were making." I think primary care physicians are saying "Just treat us like other specialists, reimburse us

like other specialists, and that will go a long way toward making us feel we have been recognized, go a long way toward making us feel like we are of some worth to the society we serve."

Mr. HUMAN. Thank you very much, Dean Patton. One other thing that might be said by your presence is that those few medical schools we have in rural areas such as yours in eastern North Carolina, the one in eastern Virginia, and the 2-year program at Duluth, historically have a much better record of graduating students who go into rural care. We are glad to have somebody from one of those institutions here.

Yes, sir?

STATEMENT OF ROD PERRY, UNIVERSITY OF SOUTH DAKOTA

Dr. PERRY. I'm Rod Perry from the University of South Dakota School of Medicine. I wanted to comment, after our neighbor's comments, that I think there is a necessity for our primary and tertiary hospitals to work together. Our large institutions in South Dakota actually provide administrative support, financial support, and support of specialties to our rural areas in order to make these areas more attractive.

By doing this, it allows our medical students and residents to go to those rural areas and have contact with the primary care areas there as well as the tertiary care areas at the same time. We also have nursing programs and OT and PT programs in these rural areas that are also partially housed in the tertiary, or greater than 400-bed hospitals. So it is a combination of approaches to the large and small hospital, I think, in these rural states, that enable us to do this. I think Dr. Loren Amundson will be addressing that later this afternoon.

Mr. HUMAN. Dr. Perry, you should also have mentioned, if you took a look at Mike Whitcomb's research, that the University of South Dakota has the best record in the entire country of any medical school of graduating students who go into rural areas, with about 25 percent of your students who graduated between 1976 and 1985 now practicing in rural areas. So congratulations.

Dr. PERRY. Thank you for bragging for us.

STATEMENT OF BOB BOWMAN, EAST TENNESSEE STATE

Dr. BOWMAN. I'm Bob Bowman, from East Tennessee State, Johnson City, TN. First, I would like to again highlight what the panelists have said very well, that unless there is resource-based relative value scale changes in emphasis in the order of a major impact, at least a 30 percent impact toward primary and rural care, then you can forget about a lot of the things we are talking about today. I would address both retention and recruitment.

Retention is something that has not been mentioned. I think there are a lot of people out there that you would very much want to reward as staying in practice and work with. A lot of them have kind of been counting over the past 5 years of RBRVS debate, watching the primary care numbers drop, and all the things that look bad, but they have been kind of counting on the RBRVS to come through for them and improve things. They see that piece-mealed away.

Dr. BRUCE. I think there is a major opportunity in this country to look to rural areas for some solutions to all our health systems problems. If we are concerned about the cost of care, and cost effectiveness of care, and if we are concerned about the tremendous numbers of people outside the health system, people who have no insurance or no other mechanism for pay, and if we are concerned about marshaling resources to network and put pieces together that are relevant and needed, rural America offers us that opportunity. One could later on perhaps apply the lessons that have been learned to inner-cities and to the second- and third-generation poverty that's seen there.

I think it will require a number of the things you are talking about. I am sometimes unsure about the numbers that are needed. For every 100,000 people in rural communities, an optimum number of caregivers can be calculated, and I include not just physicians in that, but many others—dentists, nurses, and other non-physician providers.

I'm sure the same numbers are not needed in rural areas, because the concentration of the tertiary specialists tends to be in more metropolitan areas, and one doesn't need all those—indeed one does not want all those out in rural areas providing care. One needs access to some of them, of course, for highly specialized kinds of problems.

So we should not try to equate numbers in the usual way. I don't think that good studies on the adequacy of care have been done, and more research is needed. It's my understanding, however, that about 5,000 physicians are needed just to provide "adequate" care in this country (that number may be loose).

My real point is that if one is going to use the opportunity of rural health in this country to address some of our systems problems, it will mean that some hospitals need to change, probably into primary health centers, to move their in-patients to regional centers where one can get CAT scans and ultrasound that is needed.

But at the system approach, the emergency systems and the concentration of long-term care is really appropriate and becomes the model that we may then later apply to first-rate care in our urban or metropolitan areas as well.

I believe that the big thing we should avoid is trying to make rural care a second class care. It's a real danger, and should not become that.

Mr. HUMAN. I'd like to add one additional thing to what you said, Tom, in reference to those comments. We should all be watching what's happening in 20 to 25 States that are beginning to take a look at the question of redefining health facilities. Traditionally we are used to the idea that there is a hospital on the one hand, a group medical practice on the other hand.

But starting in Montana, where they invented the concept of medical assistants facilities, and in California and Colorado, in a lot of areas, there is experimentation going on now to create a new kind of hybrid facility which is more than a medical practice but less than a hospital, a facility in which you can get emergency care or ambulatory care, but a facility at which people can only be hospitalized for up to 4 days under the standard definition.

It may be that these hybrid kinds of facilities will provide access points throughout many rural States and yet at the same time not attempt to be what they really cannot be any more in areas of declining population, which is full-service hospitals. This may be one of the ways out.

I think it's also important, though, as we look at rural hospitals and look at the data which shows an excess of hospital beds in rural areas, that we recognize the same phenomenon is true in urban areas as well. If we are going to look at the one, we need to look at the other as well.

Bruce.

Mr. BEHRINGER. If I could turn that question around, I think we are here to talk about linking medical education with rural areas. And if I can speak to both questions, there are tremendous opportunities for change right now in the health care organization environment in rural areas. They are either going to be imposed from the outside or they are going to grow from the communities themselves. The Federal Government has provided a number of different opportunities for communities to plan strategically for themselves and to become what they want to be 5 years from now.

At the same time, I think we want to return to this question of a united front among the academic health centers, and do we want to question the effectiveness of the Federal sources of revenue which those academic health centers and hospitals depend upon.

I would propose that the answer is yes, that if in fact academic health centers fail to respond to some of the changes that are taking place in the organization of care in rural areas the Federal investment should be questioned. Those are Federal dollars designed to help the entire country including rural America. It is incumbent upon the academic health centers to learn to help those small communities and to learn the rural ethic viewpoint how to do it, how to negotiate and most importantly how to assist in a fashion that is going to be perceived as a helpful one.

I think the opportunity is here, and the opportunity is now. We know what the answers are, it's a matter of putting our heads together and making the whole thing work.

Mr. SCHONGALLA. That's the point I was trying to make. South Dakota would be more attractive with 19 first-class facilities where you can do training than with 57 second or third grade. I also think you have to remember that 80 percent go to specialties or subspecialties so you only have 20 percent of the resident population to play with.

And I think it would be interesting to map out where they are geographically now. It could be done. It may not be popular, but it may be done. Then you could logically and rationally decide where you want the next ones.

Mr. HUMAN. In a way, the first steps in that direction have already been taken, with the so-called "EACH/PCH" program that was passed by the Congress last year. EACH stands for essential access community hospitals or larger hospitals. PCH's are primary care hospitals. They are like these hybrids between hospitals and clinics that we talked about earlier.

In seven States this year, the Health Care Financing Administration will be making grants to link up a network of smaller primary

Actually, I think there is a lot of mumbling going around as to what RBRVS will truly mean to them, especially by the year 1996, and if we lose those people, they can grossly outnumber any of the next 3 years of National Health Service Corps or any other intervention we could possibly have.

Also, there are many, many small programs, several of which have been talked about, but they are all small, on the order of several million dollars, and I think you have adequately addressed the need to get into the billion dollar categories. But the sheer number of programs—for instance, I know Jeff, your Office with 50 different States, sometimes your programs get divided into 50 different pieces. That sometimes affects the effectiveness of those programs.

Another area is grants themselves. We have some very unpredictable grant cycles, obviously, the part that was not mentioned is that we get zeroed out by the Administration every year. We never know if those program funds are going to come through. All our grants say "By the way, if you don't get any money appropriated by Congress again this year, you are doing this all for naught. I think that affects the diligence and wherewithal that we devote to those types of grants, that and the money dollars involved.

Also, when you particularly ask about the funding for hospitals through HCFA, if you are trying to fund resident stipends in rural areas, fund the residents or at least their programs, not the hospitals. I think that was brought up at a previous meeting, fund the people who need the money and the encouragement.

Montana has a very successful program with no family practice residents trained in the State other than those they bring in from other States, they get about 21 percent of the people or 19 percent of the people they bring in for just a month or two end up practicing in Montana. So basically, they are stealing other States' tax dollars.

So you have to fund the people. They fund the residents, they get the residents. You fund the residents in these programs, you will get the residents into rural positions.

Finally, speaking as a faculty member at East Tennessee State, we are in a real dilemma. As you have seen, several people speaking here have been former rural practitioner. I myself am a former rural practitioner. Where do we make the best effort? Do we make our best efforts being rural practitioners, or do we try to go into medical schools and fix the system?

What happens here and at other places will either reward us or make us extremely frustrated. Yes, we might go out into rural areas, but we are not going to pull the 5 or 10 or 20 students or residents with us that we hoped to by working through medical education.

Then when you look at these grants, myself included, where do we spend our efforts? Do we work directly with students? Do we get the students to work out in rural areas with other students? Do we work on grants? Do we support residency training?

Oftentimes we get into so many different pieces there are not enough of us. Kellogg now has a program that we have been fortunate to get funded in. But it has taken about half of our rural faculty base into that program, and it may actually jeopardize our

other rural programs, because it makes us actually short in other faculty positions. Where are we going to get these people?

Again, do we get them from rural practice positions, or where do we get them? They are not being trained. Do we get them out of residencies? Well, then they are again cut out of the pool. So we are competing, just like urban HMOs are competing, just like other rural practices. There is only a certain limited number in the pool of these folks.

Yes, we need to address medical schools, so that they will produce more of these people, but I think science is not the answer. There may be more than science to consider for these people. They have to have a broad-based approach.

One other area of funding in terms of faculty, that might be a suggestion, not to be a critic, but there was a Public Health Service advocacy program, which involved mainly just some presentations. Why not fund those faculties, so it's a group of rural faculty that work in 380-family practice programs in general medicine or general pediatric programs? Then you can call the shots and say "Look, you are the faculty member we are funding, either full-time or half-time," and you can do the things you want with that faculty member to interact with the students and residents and actually influence people into public health service or rural careers.

Mr. HUMAN. Thanks, Bob.

Dr. MULLAN. We are developing many good points. Let just pick up on two, both having to do with the question of the GME-HCFA connection. The point you raised, and Dr. Whitcomb raised, is a very important one as we consider ways that the GME dollar, either direct or indirect, might be rerouted to be more effective, to be policy-positive in regard to primary care, we need to think of creative solutions.

The proposal that has been made actually by the Health Care Financing Administration several years running now to change the weights and reimburse primary care in a differential fashion has a certain face appeal. On the other hand, it does not address the problem Dr. Whitcomb pointed out, that even if you entice hospitals into offering more primary care residencies, when you don't have enough residents coming available who want them, you have not fixed the problem at all. This relates to Dr. Bowman's point, putting the money on the residents in a way that they can appreciate it in a primary sense. Anyway, it offers a new way of considering how we might proceed.

We have had National Health Service Corps scholarships for people in training. There is now loan repayment available once again for people out of training. We don't do anything in a primary sense that the resident feels during the residency years in terms either of loan repayment strategies or premiums, bonuses, cash differentials, and there is fertile field for policy creation in that regard, whether it's using GME dollars or other dollars, we really have been kind of blind to what we might do to entice residents into primary care.

A final point attached to that, which is one that I think is apt to raise in a Senatorial forum such as this, I think as soon as one gets very far into these domains, one encounters very quickly a political reality, and that is that the committees who have jurisdiction over

GME dollars in terms of Medicare, and those that have jurisdiction over most health policies in the domain in which we are used to dealing are different committees. And that has a whole life and history of its own.

I have no idea how to address that problem, other than to have been a minor player in it, and encountered it almost immediately. There needs to be some avenue, if these debates are really to move ahead, there needs to be some way to pull all those together. If you want to throw in the Veterans Administration, you have yet another set of jurisdictions.

So if one wants to get one's arms around medical education policy, you have at least three different jurisdictional issues, or three different jurisdictions. There must be ways Congress deals with this or has dealt with this before. I don't know them, but I think it is a reality factor that we should early on begin to consider.

Mr. HUMAN. I would like to add one thing to respond to a different part of Bob Bowman's presentation, and that is the issue of the choices that people in rural areas have to make. Do you go out there and practice, do you work for medical school reform, or do you come to Washington and advocate?

Rural populations are only 25 percent of the Nation's population. They are scattered by nature. It is fairly difficult to organize and represent rural populations in State capitols and in Washington. The National Rural Health Association does this nationally and some other organizations play important roles as well. There are State rural health associations in some States. Our office this year will be funding State offices of rural health with Federal grants to help them expand or to help new State offices get started. We are hoping those State offices will be effective voices for rural constituencies within the States.

I guess what I am really saying here is that it's important that number one, rural constituencies form around these issues, involve the medical schools, and try to advocate changes. And number two, it's important to come up with proposed programs that work and that are affordable.

Congressman Roy Roland, the only physician in the Congress, told me once that the problem with the rural health issue was that everybody knew what the problems were, but nobody knew what the affordable solutions were, and called upon rural constituencies to do a better job of trying to achieve consensus and to bring concrete recommendations to Congress for enactment.

Yes, sir?

STATEMENT OF JIM BOULGER, DULUTH, MN

Mr. BOULGER. Jim Boulger from Duluth. I would like to thank Dr. Whitcomb for presenting some outcome results, finally. There are programs that are doing well, and others that aren't doing so well. I agree that it's very important to fund programs to get things going even further than they are now. I think it's also important to continue to fund programs that have been successful.

I would like to underscore also Dr. Whitcomb's remarks about the importance of the educational environment at the medical

school level. If you bring the wrong people in, you don't get the right people coming out. If you bring the right people in and turn them off, you also don't get the right results at the other end. I think the results at Duluth certainly show that you can do both.

Mr. HUMAN. Thank you. Yes, sir?

STATEMENT OF DAVID YENS, NEW YORK COLLEGE OF OSTEOPATHIC MEDICINE

Dr. YENS. I'm David Yens from the New York College of Osteopathic Medicine. This is an issue I have been interested in for 12 or 15 years. Finally, I am in a position to try to do something in the State of New York, along with some other schools that are in the process of doing it. I guess I have to speak up for the Northeast, that didn't show up too well in your survey.

One of the situations we are facing is a State that is likely to cut capitation, which will reduce the funds available for medical education, and at the same time try to deal with a State where approximately one-third of the area is considered a physician shortage area, which surprised me. You think of New York, a massive State, massive number of physicians, all of them in New York City, of course.

So we have a serious physician shortage area. Several of the up-state medical schools are doing quite a bit about this. We are located on Long Island, but there really isn't anybody else in the New York City area except for Stony Brook that is trying to do too much about it.

Coming from the osteopathic physician, I certainly appreciate the comments about Kirksville that led off the discussion. We, as you know, are very much involved and have historically been involved with preparing primary care physicians. At New York Osteopathic, we have something over 50 percent of our graduates who go into primary care medicine.

What we have noticed, however, is a decrease in that number. It was substantially more than that several years ago. And we are facing the same problem as everybody else—how do we encourage people to go into primary care medicine?

In addition to that, we are a new medical school, we are now recognizing that we do have a responsibility for trying to improve rural medical education. To do that, we have just started a rural preceptorship for pre-clinical students.

We have found a chicken and egg problem. We are trying to find people in the rural areas who are willing to help out, rural preceptors, at the same time, we don't have an active program, so how do we find students who are interested? At the same time, we don't have an active program, so how do we get rural students to recognize we exist and apply to us? So we have some really difficult problems here.

Now, we have been every pleased with the support we have gotten from the Bureau of Health Professions over the last several years, which has provided funding for the development of our family practice program. However, in trying to develop this rural outreach activity, we found some problems there, and that is, the grant RFPs are written somewhat restrictively.

So it's difficult to say "Look, we want to put together a student preceptorship program, but as a part of that, we would like to incorporate some outreach programs to the physicians, and provide services to these rural physicians in some way." You have to pick money from different programs to do different things.

One of the questions I would have is, is there a possibility of developing some sort of omnibus grant that will permit several functions to take place under one funding umbrella? That might simplify the sort of problem we are dealing with.

A second area I think is extremely important is providing services to the rural physicians, not just by going there and working with them, but through the development of a computer network. I recently learned that West Virginia has some excellent programs of this nature. It is the sort of thing we would like to initiate through New York Osteopathic, because we are remote from the rural areas.

I actually published a paper on this questioning physicians about computers about 4 years ago. And I think the potential is good.

But we need information on what is happening elsewhere, and there needs to be some means of providing support for these outreach activities, which may or may not provide for a computer network, but at least should provide for some way of supporting the interaction between the medical schools and the rural communities. Some of that, of course, has to do with the rural hospitals.

But again, you have a chicken and egg problem, and a funding problem. How would we make contact with rural hospitals? Well, it takes money to go up there and talk with them. In the cash-poor environment we are facing right now, that's very difficult. The will is there, the funds aren't.

There is one third point I would like to make and that is the difficulty in finding out about the various funding programs available. I heard this morning about some programs we hadn't heard about. Is there a way of perhaps this committee or some other appropriate committee putting together a list of the programs that do provide support in this area, and making that available to those of us who are interested? Otherwise, we have to have somebody who reads through the Senate record with a fine-toothed comb and try to find these sorts of things.

Mr. HUMAN. Dr. Yens, I would like to give you a comprehensive answer, but I am concerned about people getting to lunch. So I would just like to mention a telephone number in response to your last question. This is the Rural Information Center that our office maintains. It has a national toll-free number, 1-800-633-7701, and information is available there on programs that work and on funding sources, when they exist. Many times they don't exist.

When we have a chance, maybe we could talk a little more about at least one program, the Rural Health Outreach Program, which we did have available this year, but with a grant period that now is closed. It offered some more comprehensive possibilities than many of the programs Congress has passed recent years. Thank you.

With our next two speakers, we will conclude the morning's activities and go to lunch.

Dr. MULLAN. Jeff, could I add one thing? Let me also introduce Dr. Marc Rivo. Marc, why don't you stand up or wave your hand?

He is the Director of the Division of Medicine in the Bureau of Health Professions. In terms of creative thinking about umbrella grants and other kinds of notions, you might talk with Marc.

STATEMENT OF DARRYL LEONG, NATIONAL ASSOCIATION OF COMMUNITY HEALTH CENTERS

Dr. LEONG. I am Darryl Leong, with the National Association of Community Health Centers. I just want to make two points. One is to follow up the one that Fitz just mentioned, the potential synergistic effect of combining graduate medical education dollars and Medicare with Title VII dollars, the small amount the Fitz described earlier, and just reemphasizing that point—not simply that they are true sources of funding, but there is some way they could work together.

The second point is, community and migrant health centers, both in rural and urban areas, are really possible partners with the academic health centers. I don't think we are trying to set up any kind of divisive mood.

I think we are going to hear this afternoon, and have already heard this morning, some of the excellent examples that the combined academic health center environments and community health center environments, and we just want to support that.

Mr. HUMAN. Thank you very much, Darryl. And of course, community health centers have standards that have been set up to provide comprehensively medical care, which I think makes them excellent places for these kinds of training opportunities.

Yes, sir?

STATEMENT OF JOSEPH LEVENSTEIN, UNIVERSITY OF ILLINOIS

Dr. LEVENSTEIN. I'm Joseph Levenstein, of the University of Illinois, Rockford, Department of Family and Community Medicine.

I think we all agree that we are dealing with a massive systems problem and that the solutions are systems ones. Nevertheless, the rural opportunity does provide us with a model to produce a health care to answer several of the questions.

However, most of us involved in this problem are suffering from massive difficulties, some of which have been enunciated this morning in terms of manpower, in terms of monetary resources, etc. Tremendous demands are being placed on tiny resources, small departments with very limited faculty. And unless a major commitment is made in terms of reversing some of these figures this morning, I don't think we are really going to get anywhere.

If you look at the type of discrepancy in research funds of \$5.5 billion and \$15.4 million, and similar major discrepancies, we really haven't got a chance in attempting to meet the health care needs and the demands of rural, inner-city areas, etc.

So this type of adjustment, however painful it is to the conventional medical people in the medical schools, has got to be made. We are working with a tiny base, and they are asking us to provide 70 percent of the future doctors to be primary care physicians.

I think unless one honestly applies one's mind to that, however, painful it may be, and that the existing medical system and cultures boosted by all this money, in fairness to deans, this is where

their grants come from. If there were \$50 billion in grants in primary care research, you would see what the emphasis would be and what the culture would be of those medical schools.

Mr. HUMAN. Programs follow dollars. I would like each of the members of our panel to have one parting shot to see if there is anything else they would like to say, starting with Mike Whitcomb.

Dr. WHITCOMB. I want to return to the point that Bob Waldman raised at the very beginning about my comment about marginal issues. I think while the comments many of you made are valid and obviously of great importance to you in your own particular program, I would really suggest that they won't get us where we want to go. There must be the development of a consensus on the importance of increasing the production of primary care physicians in this country, and it must be dealt with in a comprehensive way.

I want to leave you with a thought. Our neighbor to the north, Canada, in fact is a country which is quite similar to ours. The ratio of physicians to population is almost identical to ours. The nature of many of their academic medical centers is quite similar to ours. It is a country which is very much influenced by the United States because so much of the population lives on our border—major, large cities that dominate the country.

Yet what's the output of their medical education system, which by all measures is as of high quality as the educational system in this country? Over 50 percent—over 50 percent—of Canadian graduates choose to go into family medicine, over 50 percent. Now why is that?

I won't take the time to give you opinions about it, but the fact is clear that one of the reasons is that the Canadians, both in terms of the profession, the government and the educational institutions, have reached a consensus on what it is they should be doing and they have taken steps to achieve that.

It is a fascinating story, and we don't have time to talk about it, but I think again, one can't deal with the margin. One really needs to think in terms of comprehensive strategy.

Mr. HUMAN. Tom.

Dr. BRUCE. Two points. One is that the hallmark of rurality is in the scarcity of resources. There is scarcity of schoolteachers, city engineers, political leadership, and everything else. So always we are going to have to deal with management of the scarce resources in health if we are going to be effective in developing rural health care.

Two points in that regard, first is that it must be flexible, because rural is not rural is not rural, and therefore it must be responsive to local issues. The second is it must be community driven or community based. There is no better example of that than in the WAMI program that Mike Whitcomb was talking about, where they did a rural hospital study and found that everybody was going to the next town—the "grass was greener in the other pasture" syndrome.

As they began to think about what was needed to make this small marginal hospital work, it came to be seen as the responsiveness to the people that live in that community, being able to be identified as responsive to the people in the community. So that, I think, is terribly important.

The other is that we need to be open to all those clinicians in the area, because rural communities need to marshal the scarce resources. There is wonderful opportunity for nurses to work with dentists and public health people and physicians, and for osteopaths to work with allopaths. Here is an area where this Nation and its melting pot can be most gloriously represented in effectiveness and solutions to basic issues.

Mr. HUMAN. Fitz?

Dr. MULLAN. I think the rural health constituency needs to be saluted for not only convening this get-together, but the creativity that has been evidenced and the innovation in trying to deal with the shifting and difficult situation. I think those of us who are in administrative positions should try to be as creative and responsive as possible to meet that community creativity of the rural areas.

But second, undergirding all of this is the infrastructural issues of generalism in this country. If we don't do something about that, our efforts in rural health as well as other sectors of generalism will be fruitless endeavors. So the basic underlying diagnosis is one of trying to do something about our drift away from generalism, stemming and reversing that.

Mr. HUMAN. I'm afraid to ask you for a prognosis, now that you have given the diagnosis. Bruce?

Mr. BEHRINGER. One final comment. I didn't hear anybody in the room who didn't say that we know what the problem is. I didn't hear anybody say we didn't know what the potential solutions are.

The issue is one of national will. The issue is one of understanding that the availability of manpower for all areas of the country is part of an access issue that we are going to be dealing with in the next decade of national politics. Put in that perspective, I think it's incumbent on us all to work toward some sort of common solution, as you were saying.

The second part, though, is that common solutions require linkages and linkages require an awful lot of work. They require the development of partnerships. They require the development of leadership, not only within the academic health center community who are willing to deal with rural folks, but also within rural communities. That leadership development needs to take place at a local level, it needs to be communicated through a State level, and it needs to be evidenced at the national level.

Language, I think, is one of the biggest barriers that keeps leaders in an academic health center community from dealing with these poor old country folk out there who really don't understand how medical schools work or what a residency program is anyway, but don't understand why they can't just get doctors for these communities.

Mr. HUMAN. Thank you very much. I certainly would agree with these closing comments. Public investments in health care need to solve American problems. We need to find ways to solve our problems more effectively with the investments we make with public dollars, at the Federal level, in the States and the communities. I hope that as a result of this we will come up with some good ideas.

The important news is that the Senate cafeteria is one floor down, and the elevator is around the corner to the left of the auditorium. We will see you at 1:15.

[Recess.]

Mr. HUMAN. This morning our emphasis was on establishing national policy in the area of health professions education and ways that would be beneficial to rural communities. This afternoon, in a way, we continue with the same emphasis, but we will look at it from a little different perspective. We will look at programs that seem to be working across the country, and try to relate them to what we need to do nationally.

I would like to simply note who our panelists are this afternoon, then introduce them. Charlie Cranford from Arkansas, on my far right; Bruce Bates; Sandra Hullett; and on my left, Loren Amundson and Arnold Melnick.

Those of you who have an agenda will see that the first speaker listed this afternoon is Charlie Cranford. But we are going to take the biblical admonition to make the first the last and the last the first in this case. Dr. Arnold Melnick has to catch a plane at 3:30, so we are going to lead off with him.

Dr. Melnick is Executive Vice President and Provost of the Southeastern University of Health Sciences in North Miami Beach, FL. Now, North Miami Beach is not really your prototypical rural area. It is even more urban than South Miami Beach, for example. But I think we will see that the osteopathic training program at Southeastern has some programs that merit our attention.

Dr. Melnick is a board-certified osteopathic pediatrician who is the founding dean of the Southeastern College of Osteopathic Medicine. He has written extensively in pediatrics. He has served as editor and publisher of the osteopathic periodical "Maternal and Child Health." And he was honored in 1988 as Pediatrician Educator of the Year by the American College of Osteopathic Pediatricians.

I think since I have used the word "osteopath" so much in the introduction, we ought to note at this point that nationally, only 5 percent of practicing physicians are osteopaths, but 15 percent of all rural physicians are osteopaths. So the allopathic community has much to learn from the osteopathic success in rural health care. Dr. Melnick.

STATEMENT OF ARNOLD MELNICK, D.O., EXECUTIVE VICE PRESIDENT AND PROVOST, SOUTHEASTERN UNIVERSITY OF HEALTH SCIENCES, NORTH MIAMI BEACH, FL

Dr. MELNICK. Thank you. With that introduction, you were all sitting there wondering "What in the world is he going to say about rural medicine?"

You know, none of you—I'm looking around the room, and I don't think any one of you is old enough to remember vaudeville, at least in its original inception. But one of the key introductions used by almost every comedian in the old vaudeville days, and I'm going back to 1920, 1910—no, I wasn't here in 1910—was to say "A funny thing happened to me on the way to the theater," and then proceed with the first joke.

Well, a funny thing happened to me on the way to this program, except it wasn't funny. It was serious enough that I am going to steal an extra minute or two to tell you about it. I attended the

Florida State General Practitioners Meeting in Orlando this past weekend. I ran into one of our 1986 graduates.

I said "Mike, you practiced rural medicine for 2 or 3 years before you went into the service. How come you gave it up?" I figured I would get some brilliant answer I could bring here, and I guess I did. Here's what he told me. He said "At the end of 3 years of earning \$80,000 to \$100,000, my educational debt had increased to \$150,000 and with all the consultations I've had, I can see no way I will ever get out of that debt during my lifetime."

Now all the things that were said this morning were true, and I endorse every one of them. But until you eliminate that first factor, the factor of money—and it has been alluded to—and if you are going to send a student out to earn perhaps the lowest income among his peers, and not be able to pay off his educational debts, we can do all the academic changes, we can do all the philosophical changes, we can do anything we want—it's not going to work.

That's sort of a footnote that I had moved up to a headnote, because I think it's something we must look at. Lest you think that is an unusual example, let me tell you, I am privileged to serve on the National Advisory Council of the National Health Service Corps. We found that the same thing was true in the National Health Service Corps, that students could literally have their 4 years of servitude, and I say it that way deliberately, and find their debts unreduced at the end of the 4 years.

So there is something wrong with the system. One thing is that the banker has his money, but the student doesn't get what he or she is supposed to, and the communities didn't get what they wanted.

I want to talk about the osteopathic profession. I want to thank Jeffrey for that fine introduction. That gives me one less line to say; I just had to cross it out mentally. Osteopathic physicians do take care of patients as primary care physicians way out of their proportion and also in rural medicine.

The osteopathic profession is primarily a profession of general practitioners. Fifty-seven percent of all osteopathic physicians are in general practice, not primary care, but general practice or family medicine. If you include primary care, it is 65 percent of all osteopathic physicians.

Now, I'm bragging about that, but I want to tell you I'm very sad. Because over the last 10 years, that has reduced to 65 percent primary care from 85 percent primary care. If we had enough time, I would tell you why it's happening. But the same thing that is happening in all the other health care professions is happening to us.

We are also a rural practice profession, as Jeff indicated, 66 percent, two-thirds of all osteopathic physicians, practice in communities smaller than 50,000 population.

In the osteopathic educational institutions 18.3 percent of their faculty are general practitioners, as opposed to 3 percent in the allopathic profession. Last year 55 percent of all the graduates of our schools were in primary care residencies.

What is it we are doing—or maybe I should ask the question in an egotistical sense and say, what is it we are doing *right*? Again, it

might take me about an hour to go through the details. Let me give you a brief summary.

I was privileged to do an article for Academic Medicine following a conference on rural health last year. This was the summary of some of the things that the osteopathic profession is doing that are different.

The osteopathic profession has a majority of general practitioners, provides high quality role models for students and provides them in large numbers, recognizes general practice as a very important block both politically influential, puts more emphasis on primary care in pre-doctoral work, introduces general practice rotations and rural rotations early in the curriculum, and requires them of all students. Those are the key words—"and requires them."

We also select students with an eye to primary care. Since the majority of osteopathic physicians are general practitioners, when we select students—as do all admissions committees—we clone ourselves, therefore we select people that are more apt to go into general practice. I also might say to you, on the other hand, I remember my first year as the founding Dean of SECOM.

I was most fortunate—I don't think any dean has had the great fortune I have had—and that is, we interviewed 200 students, and we happened to pick for interview 200 students who all wanted to be general practitioners in a small town in Florida. Obviously, they didn't become such. So you can't always depend on student's "expressed choice" or how you are going to get the right students.

A few words, if I may, about SECOM itself. We think we have a very successful program, both with rural medicine and primary care. And one of the reasons is that the institution, started in 1980, Southeastern College of Osteopathic Medicine, was based on the premise that we would train people specifically in geriatrics, rural medicine, and minority medicine, while at the same time teaching general practice, so our students would graduate as well-rounded physicians, from which base they could go and do anything they wanted, including rural medicine, primary care or train in specialties.

Our philosophy was to train them as general practitioners, and that's what we wanted them to be. We emphasize the geriatrics, the rural medicine and the minority medicine. What do I mean by emphasize? Well, the rural medicine program from the beginning was 18 hours of didactic work in rural medicine, in the classroom. Every student—every student—had to take a minimum of a 1-month rotation in a rural community, most of them in community health centers and migrant health centers. They were also offered the option of taking more.

More of our students opt to take 3 months in a rural community. They live there and work there for a full 3 months. It makes no difference whether a student thinks he wants to be a neurosurgeon. He spends his time in the rural community, and several have changed their minds about what they wanted to do after being there.

In geriatrics, we did a similar thing. We require 18 hours in the undergraduate curriculum of didactic work plus a month's rotation in a geriatric institution. And in minority medicine, we teach an

18-hour course and of course they pick up much of their experience with minority health problems in the various rotations.

In summary, 13 of 15 required monthly rotations are in primary care. Five of those are ambulatory primary care. And two more are 50 percent primary care. Now, I submit to you, whether you are an osteopathic institution or an allopathic institution, you cannot take a student for 15 months and train him, give him a month of ICU and a month of neonatal ICU and 2 months in the operating room and expect him to want to go to a general practice or family medicine residency. It just will not work.

As a matter of interest, our rural program attracted us early on to the AHEC program. We were very fortunate that we were the first medical school in the State of Florida to become an AHEC affiliate and to get an AHEC grant. We have had great success with it. We have developed a consortium of the four medical schools now on a statewide AHEC program. The University of Miami, which is a close colleague of ours, and the University of Florida, both now have become Federal AHEC centers.

Let me give you a real fast rundown on some of the things we do in our AHEC program. First of all, we are affiliated educationally with every college and every university in south and central Florida that has any kind of health program. You have heard the word "interdisciplinary" used this morning. We are interdisciplinary in every way possible. We support many of our programs through our AHEC program. And the rewards are magnificent.

We provide continuing medical education services for doctors in rural communities. But more importantly, we provide continuing education programs for 15 or 18 different health professions, bringing programs and educational materials to those people who are in areas where they can't get it otherwise.

We provide library services. We put a core library recently into 15 rural sites (15 rural clinics), and we serve 40 rural sites out of our University library, providing them reprint service and similar library facilities.

We established a couple of years ago something called a Practice Opportunities Program. This was a student-run, student-managed, and student-inspired program in which 200 communities in the State of Florida with populations under 25,000 were surveyed on-site by our medical students as potential locations to practice. They used what I think is one of the most comprehensive questionnaires ever developed and it was developed by students.

The outcome of that was two things. Number one, we published a text which we shared with all the health professions in the State of Florida, and which outlined all the rural locations for practice. You would be amazed at the number of students who took on this survey task who became converted to particular towns in Florida, small towns that were looking for health professionals. We are still doing that program.

We run a rural summer camp, a summer camp that is a health careers profession camp, for underserved rural students. Let me just tell you anecdotally, and it doesn't prove a thing, because I would never defend an anecdote, but it just tells you a little something about what's going on. Our first group of 22 students—these are minority, underserved students from rural areas—our first

group of 22 went to camp for 1 week in 1989. They lived in a camp atmosphere on a college campus and visited over 50 health careers professions.

Of the 17 we have been able to track—now this is a group in which you would expect maybe a 5 percent college rate—of the 17 we have been able to track, 16 are in college or about to enter college, 15 of them in health careers professions. By the way, we are expanding that camp activity. We have just received a Kellogg grant to help expand it. We are working with a major organization in the State of Florida to expand it throughout the State.

Let me close with this. I want to tell you about Southeastern University of Health Sciences. Following the establishment of the College of Osteopathic Medicine, we established a College of Optometry and a College of Pharmacy. We became a university, with the same goals—primary care, to serve the underserved.

It is an interdisciplinary university. There are not many of those. That means our buildings are not dedicated to any one school. We interchange facilities. We interchange education. For example, pharmacology is taught simultaneously to the students of optometry and the students of medicine, because 175 hours of pharmacology is 175 hours of pharmacology, no matter who is studying it. So we have interdisciplinary training.

We own two practice sites, the Broward Family Health Center, and the Opa Locka Family Health Center, both in underserved areas. And in those areas, the care of the patients and the education of our students and family medicine residents, is interdisciplinary. So on any given day, it might be a pharmacy student conducting morning rounds, it might be an optometry student, it might be a medical student. I think that's what's important in interdisciplinary education.

Let me tell you what I think is needed. You have heard a lot of things this morning, and I agree with all of it. But I have a slightly different aspect to it. In order for the medical education community and for medicine to get on the bandwagon to do this properly, number one, we need commitment, and I mean real commitment, not lip service. We need motivation and we need motivation that comes from deep, deep inside, not something superficial.

And we need incentive. You have heard that this morning. Incentive can be positive, by way of being stimulation, or it can be negative. It might be that we need coercion, and I am not personally above seeing legislation which forces institutions to do that which is good for the country.

[The prepared statement of Dr. Melnick follows:]

PRESENTATION BY ARNOLD MELNICK, D.O., EXECUTIVE VICE PRESIDENT AND PROVOST, SOUTHEASTERN UNIVERSITY OF THE HEALTH SCIENCES, FOUNDING DEAN, SOUTHEASTERN COLLEGE OF OSTEOPATHIC MEDICINE

I am Dr. Arnold Melnick, Executive Vice President and Provost of Southeastern University of the Health Sciences. I am pleased to be here to present information to this symposium and the Senate Select Committee on Aging. My role is to represent, first of all, the osteopathic profession and to try to explain why the unique aspects of our particular profession seem to be making a difference in primary care and rural health. Second, I am here to tell you about our model rural program at Southeastern University of the Health Sciences.

THE OSTEOPATHIC PROFESSION

The osteopathic medical profession has been a profession of general practitioners. Fifty-seven percent of all D.O.s in practice are in general practice/family medicine. Another 8% are in internal medicine, pediatrics and obstetrics/gynecology for a total of 65% in primary care. Osteopathic medicine is also a rural practice profession. Sixty-six percent of all osteopathic practitioners practice in areas with less than 50,000 population.

In our osteopathic medical colleges, the emphasis is also on primary care and general practice/family medicine. Of the osteopathic faculty in all our schools, 18.3% are general practitioners/family physicians as opposed to 3% in allopathic medicine. Last year 55% of our 1989 graduates were in primary care residencies. Osteopathic physicians serve as primary care practitioners out of proportion to their numbers: Making up approximately 5% of the physician population in the United States, osteopathic physicians serve as primary care doctors to about 13-15% of the population.

What is it that we are doing? or perhaps I should say: What is it that we are doing right?

Let me review a few of those items:¹

Because the osteopathic profession has a majority of general practitioners, we are able to provide sufficient high-quality role models for students.

The preponderance of general practitioners in the osteopathic profession makes them politically and influentially a dominating force in training matters and accreditation.

Student selection is strongly skewed toward those with primary care aspirations: first, by choice; second, by virtue of the large numbers of general practitioners serving on admissions committees; third, because admission committees tend to clone themselves; and fourth, because so many candidates are referred by osteopathic general practitioners (again by virtue of their predominant numbers).

Osteopathic curricula are aimed at training students to become general practitioners. A full array of didactic clinical courses are taught (many by general practitioners). All students are required to take all subjects with very few electives and, as a result, students get a complete exposure to all of medicine with major primary care input.

In osteopathic medical education, most rotations are required and cover a wide variety of primary care subjects. Although there are variations from one osteopathic medical school to another, all require one or more rotations in general practice and most require basic primary care rotations.

A large number of clinical rotations by osteopathic medical students are served in community hospitals where the student, whether on primary care or specialty rotation, experiences the role models of osteopathic general practitioners in considerable number.

The osteopathic profession requires a one-year rotating internship prior to starting on a residency program (some modification of this has been introduced recently by the osteopathic profession). This, in turn, exposes the interns to a well-rounded education and additional contact with osteopathic general practitioners.²

In geriatrics, we also require an eighteen-hour didactic course and a one-month rotation in a geriatric institution. For minority medicine, we require an eighteen-hour course; students also receive a great deal of experience dealing with minorities on their rotations.

As a matter of fact, 13 out of the 15 months of required rotations for our medical students are in primary care. Of those, five months are spent in ambulatory primary care and two rotations are 50% ambulatory.

SECOM'S AREA HEALTH EDUCATION CENTER (AHEC) PROGRAM

As a complement to our program in rural medicine, we discovered the AHEC program and we found that it tied in well and directly with what we were already doing in rural medicine. We were pleased to have been the first AHEC program in Florida. And AHEC has become such an important part of us that it is often hard to differentiate AHEC from our own rural program. With the addition of AHEC, we

¹ Melnick, A. Osteopathic Medicine and Primary Care Practice. Plan or Serendipity? Acad. Med. 65 (1990): 8-7.

² Natkow, N.A. Osteopathic Education: Does Practice-Based Orientation Enhance Primary Care Delivery? Proceedings of the Second HRSA Conference, Primary Care Medical Education, Health Resources and Services Administration, Public Health Service, U.S. Department of Health and Human Services, Rockville, MD. 1988: 265-300

have been able to extend our service programs through South and Central Florida, which is predominantly rural. Southeastern University's program covers 19 counties with a total of nearly 19,000 square miles. AHEC funding has enabled us to continue and to expand our program of assigning osteopathic medical students and osteopathic general practice residents to underserved area health centers. We are affiliated in our AHEC program with nearly every college and university in South and Central Florida which has health related courses.

We provide continuing medical education for physicians (M.D. and D.O.) and we provide continuing education for ten or twelve other health professions in our area of service, including nursing, pharmacy, nutrition, social work and others.

We provide strong library services in the form of supplying core library units to outlying clinical sites (more than a dozen) and rapid photo-copy reference services (more than 40 rural sites). In recent months, we have supplied computers with modem capabilities and software to another dozen rural health locations to use for computer-assisted learning and rapid access to broad state and national information bases.

We have made available services from our College of Pharmacy's Drug Information Center to over 40 rural sites at no cost to them.

We have two unusual AHEC activities that are quite special to me. We have developed a *Practice Opportunity Program* in which our osteopathic medical students have studied 200 of the smallest towns in Florida by surveying and visiting them to collect information on potential practice locations for health professionals. Two years ago, we published the results of the initial surveys in a 322-page book, which we then made available to all osteopathic interns and residents in the U.S. and sent it to every health profession organization in Florida. We continue an on-going survey program.

We run annually an outstanding Health Careers Camp for underprivileged rural high school students, and it was recently recognized by a grant from the W. K. Kellogg Foundation. For example, this year the camp lasted two weeks, with approximately 35 students each week. Students were selected with the aid of their school principals. They were supervised by counsellors who were medical or optometric students from our University and they lived together on a local college campus with much of the usual camp activity. During the week, they visited and observed nearly 50 health careers in operation. They had the opportunity to discuss health careers at each site and in the evenings with counsellors.

While a couple of years of operation with a minimum number of students cannot provide reliable statistics, let me at least tell you about our first year's group. In 1989, 22 high school students attended our first camp. Of the 17 we have been able to track, 16 are presently in college or about to enter college. And 15 have chosen health related fields. We are pleased with these results in a group whose college attendance might be estimated to be 5-10%. The 1990 following-up appears to follow a similar trend.

SOUTHEASTERN UNIVERSITY OF THE HEALTH SCIENCES

Over the past few years, Southeastern College of Osteopathic Medicine expanded with the development of a pharmacy school and an optometry school. With the addition of these new schools, we became the Southeastern University of the Health Sciences, an inter-disciplinary university. "Inter-disciplinary" is a serious business to us. Our buildings are not dedicated to any one profession; no one school owns space or classrooms or offices. Our teaching is inter-disciplinary whenever possible, and so are many extra-curricular activities. As examples, pharmacology is taught simultaneously to medical and optometry students, and our Basic Science departments come under the jurisdiction of the University, thus avoiding turf problems. There are University-wide social events for students. In the clinics that we own and operate, our Broward Family Health Center and our Opa Locka Family Health Center, the three professions are integrated in their service to patients and in their education. Typically, morning rounds may be conducted by a pharmacy student or a family medicine resident or an optometry student. Interesting and instructive cases are shared among all three groups. Other integrative features abound.

RESULTS

What are the results of this particular approach? In the SECOM class of 1987, 55% are in general practice or in general practice residencies. In the class of 1988, 71% are in general practice/family medicine or in one of those residencies. In the class of 1989, 53% are in either G.P. residencies or in general practice/family medicine. This is an average of 60% across the board.

RECOMMENDATIONS

It is impossible to digest all observations and recommendations into one statement. But from my view, I think there are three things that must exist before any programs can be successful in order to promote care and improve rural practice. They are needed from the medical schools and the medical education community. First of all, we need *commitment*; I mean real commitment not just lip service. We need *motivation* and that motivation must be from deep inside, not a superficial one. And we need *incentive*, whether it's positive in the form of reward or whether it's negative in the form of coercion. And I am not above supporting legislated action to insure the changes.

SUMMARY

A couple of years ago, I expressed my views on the state of medical care in the United States in an article entitled "The Third World of Medicine".³ In it, I suggested as an analogy to the geo-political three worlds, that the First World of Medicine is general medicine directed primarily to white, upper or middle class America which believes that medical care is available to anybody who needs it. The Second World of Medicine, I observed, was the world of high-tech, highly sophisticated and highly specialized field of medicine which dealt in specialties and subspecialties and felt that if it was technically possible, no matter how much it costs, it was to be done. The Third World of Medicine, I postulated, was comparable to the Third World itself: the underserved, the poor, and the economically disadvantaged. I felt that its major components were geriatrics, rural medicine and "minority medicine". At that time I wrote, and it expresses my philosophy today, "No one has yet suggested that attention be paid to the political Third World to the detriment of the First World or the Second World. Neither am I suggesting that orthodox medical teaching be diminished in order to accommodate understanding of the Third World of Medicine . . . Some way, somewhere, somehow, medical education must find a way to address these issues. They can no longer be ignored. Medicine and medical education must squarely face the Third World of Medicine."

Mr. HUMAN. Thank you very much, Dr. Melnick.

I neglected to say, incidentally, in introducing you. That is that Senator Bob Graham had hoped to be here to provide your introduction but his schedule did not permit it. That's on my mind because I know Senator William S. Cohen has also been struggling with his schedule this afternoon and was hoping to come and introduce our next speaker, Dr. Bruce P. Bates. But since he has not been able to arrive so far, I think I will go ahead and do that.

Dr. Bruce Bates is Dean of the College of Osteopathic Medicine of the University of New England, in Biddeford, ME. Dr. Bates is board-certified in general practice and still practices part-time. He is former Project Director of the Maine Area Health Education Center, and a national leader in osteopathic medical education.

Dr. Bates is going to describe the efforts of his programs at the college in rural health and primary care promotion.

Dr. Bates.

STATEMENT OF BRUCE P. BATES, D.O., DEAN, COLLEGE OF OSTEOPATHIC MEDICINE, UNIVERSITY OF NEW ENGLAND, BIDDEFORD, ME

Dr. BATES. Thank you. It is of course difficult to follow Arnie Melnick in any presentation, particularly when it involves the osteopathic profession. But not knowing any better, I am willing to give it a go.

³ Melnick, A. Andrew Taylor Still Memorial Lecture: The Third World of Medicine. J. Am. Ost. Assn 87 (1987): 692-695.

It is an accepted maxim that medical education acts as a major influence on the students' decision as to practice location and practice style. We have succeeded in the United States in developing a highly sophisticated urban and university-based tertiary care model for training in medical education. That paradigm has provided this Nation with a sorely needed and necessary and effective sophistication of medical care.

But I represent an equally valid paradigm of education that seeks humanistic, primary-oriented students and exposes them to linear, community-based educational experiences with practicing physicians, practicing physicians as instructors, and practicing physicians as role models, and a curriculum taught by primary care practice physicians, not as an add-on module, but as a sincere, constructive, and central theme and mission.

I represent a profession that has endorsed that principle for 100 years. You heard the statistic that while we represent 5 percent of the Nation's physicians, we provide 15 percent of the rural health care.

As education theories came and went, the osteopathic profession retained its allegiance to general practice, and it retained its allegiance to rural care. I also represent a new school, a little over a decade old, that in its youthfulness and zeal did not realize it could not, didn't realize that it shouldn't do, and went ahead and did.

In that zeal, it found new and creative ways to accomplish that which again, it didn't know it shouldn't be trying to accomplish. Again, it was not as an add-on response to an isolated grant opportunity or to legislative mandates, but as a central theme to the school.

I would like to describe for you how the University of New England and its College of Osteopathic Medicine has sought to link medical education to primary care and rural medicine. It begins with that central theme, that it is a congruence of training and mission, accepted not just in theory, but by the board, by the administration, by the faculty and by the student body, to intentionally prepare students who can practice in rural settings.

Now, it's much more complex to manage that system. It's much more difficult to run a decentralized program. But with tolerance and flexibility, a less homogenous and more responsive primary care provider has resulted. The mission of the College of Osteopathic Medicine is to prepare primary physicians to serve New England. Its preclinical curriculum is directed by practicing generalists. It is delivered by practicing generalists, and has a heavy emphasis on community-based training.

This community-based training does not begin after the science years. It does not begin after residency. It begins on day one, and it begins in our introduction to clinical medicine course, and in our very active first-year preceptor program, in which students are provided observerships in frail and well elder settings, in primary hospitals, and in ambulatory private practices. It extends into the predoctoral clinical years with an emphasis on training in small community hospitals, ambulatory practice, and a required rural care area health education center preceptorship.

It involves the admissions committee which selectively seeks students and uses practicing generalists in that screening process. It

supports and nurtures those students through the entire process. The AHEC preceptorships are at the core of this in the clinical training years, because they incorporate 40 primary physicians and their affiliate community hospitals, serving rural Maine towns of less than 10,000, most less than 6,000.

Eighty-five percent of our graduates have extolled the credibility of this valuable learning experience in AHEC as the most positive professional growth experience of their entire predoctoral preparation. All clerkships are designed to prepare the generalists who will be comfortable in the primary rural setting. In fact, a rotating balance specifically discourages specialty tracking during the predoctoral years. Therefore, greater than 60 percent of our graduates are choosing primary post-graduate placements for residency.

Now, we are too young to know the outcome of that in the long term. But in the short term it is certainly encouraging.

Our clerkships have a very close link to residencies at Brighton Medical Center, Eastern Maine Medical Center, and at Central Maine Medical Center, where osteopathic and allopathic residents work together.

We have a second theme, and that is that our rural physicians practice in a multidisciplinary environment. The effectiveness of a rural primary physician is dependent upon the availability of supporting services and the physician's knowledge, appreciation, and ability to work with those services.

To inculcate these values, the University of New England College of Osteopathic Medicine students undertake multidisciplinary experiences, again beginning in the first year, so that it is not new, it is not an add-on. They are placed in training settings with therapists, social workers, nurse practitioners, and physicians assistants to gain a professional respect and appreciation of the complementary aspects of the skills of each work. Students work as part of an AHEC rural interdisciplinary team, and as part of a geriatric interdisciplinary team, involving our undergraduate nursing, physical therapy and occupational therapy programs.

Our students are encouraged to engage in community service, teaching high school students, elementary students, patients and families. While on services in community hospitals, the students live in the communities. They do not commute to them. They live in them not as visitors, but as active members of those communities attending school meetings, community organizations and the like.

We support a multi-organizational approach to enhance recruitment and retention. Such a program has involved 13 different institutions in the State of Maine for physicians assistants, medical students, physical therapists, and occupational therapists. This requires tremendous teamwork, confidence, and—

Mr. HUMAN. I have a brief interruption. I would like to introduce Senator Larry Presser from South Dakota, who has just joined us. Senator Pressler, I wonder if you would like to say anything initially here? We would be glad to have you speak now or later, whatever you would like to do.

STATEMENT OF SENATOR LARRY PRESSLER

Senator PRESSLER. I don't want to interrupt the presentation. I do want to thank you all for being here and for participating in this. As a member of the Senate Committee on Aging, we will be reading very carefully the proceedings here, and getting some of your recommendations.

I have been particularly interested in the issue of rural health care delivery, which is of great interest in the State of South Dakota, where I come from. But I know there are equally great problems in the inner-city, as my wife and I have a home only 3 blocks from here. Washington, D.C. is probably not a good place to have a heart attack, at least some parts of it.

So there are problems with medical care delivery wherever you are in our country. Also, we are at a crossroads in terms of what to do about paying for medical care services in our country. I think this Congress and the next Congress will be historic in the sense that we have to decide. Some people want to adopt the Canadian system, some people want to adopt the European system.

I think our system will be modified somewhat, but there is a growing clamoring for change, and there are no easy solutions to how we are going to pay for it, and have to ration services and so forth. There is an enormous question. Most people say "Well, let's adopt the Canadian system," without thinking that if we do that, we will have to have rationing. There are lots of problems with the Canadian system.

We have to remember that the free enterprise system has delivered better medical care services and gotten them out and around than any other system in the history of the world. We don't want to throw the baby out with the bathwater.

I just wanted to come by as a member of the Special Committee on Aging, and thank you for being here, and pay a special tribute to Dr. Loren Amundson, of my State of South Dakota. The Aging Committee could not have a more qualified person. He heads our office dealing with the rural elderly, and we are very proud of him. I wanted to come by and say that.

We are very proud of all the panelists, and we look forward to the papers presented, and we look forward to the questions and recordings and the presentations that we have. Our Office of Rural Health Care did not have to look far to find the perfect candidate to head the office. Dr. Amundson assumed the duties as the Director of the South Dakota Office of Rural Health in 1990. I know he is going to share or has shared some of his views.

I will be in and out this afternoon, I hope to be back later, but I did want to come by and say how proud we are of his work. I know I have interrupted someone mid-sentence here. Thank you all very, very much.

Mr. HUMAN. Thank you very much, Senator Pressler. I think we are all very pleased that you were able to come and be with us. Please feel free to interrupt the proceedings at any point. This is a workshop for you and other members of the committee.

Dr. Bates.

Dr. BATES. My only disappointment is that I didn't get to utter those famous words "I yield the floor to my esteemed colleague."

The role of clinical training at the New England University College of Osteopathic Medicine requires tremendous teamwork. As I stated, we have worked with 13 different institutions in this effort. This requires confidence and trust, laying aside egos. But it works by accepting the paradigm of community education as the methodology for the outcome.

Our third theme is that community based education is an unresolved challenge. As I said, it's decentralized, and this causes a great deal of concern in maintaining quality and consistency for each student. Flexnor was right for the high-tech tertiary science of medicine, but a new vision is needed for rural practice.

Ensuring faculty comprehension, acceptance and support of curriculum goals and objectives requires high-quality faculty development. We need to ensure that all students have core competencies, attitudes, and skills by requiring a balance of practice, study, and integration uniformly assessed by the preceptors and consistently employed.

Perhaps most importantly, we must inform these students and train them in the art of self-study and self-learning, to carry on throughout the years.

The rural faculty and the collegiate faculty must establish a mutual admiration and respect, and linkages to graduate medical education must be created, funded, and implemented to provide a mechanism of closure in this continuum. To only deal with the recruitment and the training is not enough. Post-graduate issues and retention issues must also be addressed.

Aspirations of the rural students must be raised. The expense of a medical education currently results in an indebtedness more easily liquidated in a high specialty practice than in rural America. The training locales in rural communities need a method for reducing expense so as not to divert resources from patient care in order to participate in recruitment, retention, and training activities.

Therefore, we must have a mission. We must use role models that overcome the cognitive dissonance. We must provide funding that overcomes the financial dissonance, and we must provide a positive differential for primary residencies.

This can be accomplished, and the outcome will benefit our Nation. But broad strokes are required. There must be a closer connection between the National Health Service Corps and other similar programs, such as AHEC, and primary oriented medical schools, to close the loop educating for rural service.

A bold State and Federal partnership is needed in sustaining programs such as AHEC that have proven successful in recruitment and retention. There must be an expanded recognition that rural service requires an alteration in policy for relative value in reimbursement as well as strategies for preventive services and team-directed care.

Ultimately and most critically, there is a need for a special recognition of and support for medical education programs truly committed to preparing primary care physicians for rural America.

I have served on a number of review panels that attempt to change those using the traditional paradigm as if to teach old dogs new tricks. A patchwork without commitment results. Why not rec-

ognize the validity of both paradigms and reward the strengths of each?

Under the current paradigm, we who are succeeding in this endeavor are still being measured by the research production, grantsmanship and high-tech paradigm. Until the alternative paradigm of community based medical education is equally recognized, this disparity will continue.

Thank you.

[The prepared statement of Dr. Bates follows:]

"LINKING MEDICAL EDUCATION TO RURAL AMERICA," SENATORS COHEN AND PRYOR INVITATIONAL WORKSHOP, WASHINGTON, DC, JULY 29, 1991

BRUCE P. BATES, D.O., ASSOCIATE DEAN FOR CLINICAL AFFAIRS, UNIVERSITY OF NEW ENGLAND, COLLEGE OF OSTEOPATHIC MEDICINE

It is an accepted maxim that medical education acts as a major influence on a student's decision as to eventual practice location and practice style. This influence is initiated in the premedical baccalaureate programs and in the medical school recruitment and selection process. It extends then into the classroom and clinical education phases exemplified by the faculty and school mission congruity, the selection of training sites, and the appropriateness of role models throughout a continuum. Ultimately the placement opportunities, continuing postgraduate education, and community support systems enter the process.

We have succeeded in the United States in developing a highly sophisticated urban, university-based high tech tertiary model of training in medical education. Taught by academic physicians and researchers isolated from everyday practice, it is fragmented into modules. It is procedurally and technologically oriented and it is highly scientific. This paradigm has provided this nation with a necessary and effective sophistication of medical care. It has established a measuring stick for accrediting agencies, public policy agencies, foundations, and government.

There is another equally valid paradigm of education that seeks humanistic, primary oriented students and exposes them to a linear community based education with practicing physician instructors as role models, and a curriculum based on primary care not as an add-on module but as a sincere constructive central theme and mission. This paradigm is coupled with a training experiential model that provides a continuum of that philosophy from student recruitment through clerkship and into residency and practice.

I represent a profession that has endorsed that principle for 100 years. As education theories came and went, the Osteopathic profession retained its allegiance to general practice and rural practice. I also represent a new school a little over a decade old that endorses that tradition yet in its youthfulness and zeal has sought new and creative ways to accomplish it. This is not an "add-on" as a response to isolated grant opportunities or to legislative mandates but is central to the core of the school.

However, despite pockets of support for this paradigm, a lack of consensus among governmental leaders, bureaus, and public policy has not made implementation easy. Accrediting and granting agencies as staffed and operated are more comfortable with the first high tech tertiary model than with the decentralized community model and thus prone to measure programmatic strengths with an inappropriate and jaundiced eye.

Why then are we surprised when we vocalize support for a primary care outcome but support tertiary urban based traditional models (with a few modules to placate the activists) that we do not achieve that outcome?

Allow me to describe how the University of New England and its College of Osteopathic Medicine has sought to link medical education to primary care in rural Maine.

CONGRUENCE OF TRAINING AND MISSION

If you want to prepare primary physicians who can practice in rural settings you must intentionally prepare them for that setting. This is not an afterthought but requires the commitment of the board, the faculty, the administration, the student body, and the training locales. It is complex to manage such a decentralized program, but with tolerance and flexibility a less homogenous, more responsive primary care provider can result. The College of Osteopathic Medicine at the Universi-

ty of New England has a mission to prepare primary physicians to serve New England. Its preclinical curriculum is directed by practicing primary physicians and delivered by practicing primary physicians. The preclinical and clinical curriculum has a heavy emphasis on community based training. This begins in the first year with observerships in the preclinical Introduction to Clinical Medicine Course and in an active Preceptorship Program that places all students in well and frail elder settings, primary hospital, and ambulatory private practices. It extends into the predoctoral clinical years with an emphasis on training in small community hospitals, two months ambulatory practice, and a required rural care Area Health Education Center (AHEC) preceptorship.

These preceptorships incorporate 40 primary physicians and their affiliate community hospitals serving rural Maine towns of less than 10,000 people (most less than 6,000). The community based faculty participates in formal, intensive faculty development programs. 85 percent of our graduates have extolled the credibility of this valuable learning opportunity in AHEC as the most positive professional growth experience of their predoctoral program.

The University of New England and its College of Osteopathic Medicine are not operating in isolation. Although privately funded without State subsidy, administrators are responsive to and involved in State level discussions with the State's Health Manpower Planning Committee Legislative endeavors and with industry. The Maine Consortium for Health Professions Education and the AHEC cooperative programs have been established to extend rural health training to other professionals.

The rural emphasis of the University of New England College of Osteopathic Medicine utilizes four educational strategies to improve recruitment and retention of health providers in underserved areas:

- Clinical training for students in the locales;
- accessible continuing education for practitioners in the locales;
- student recruitment from the locales;
- technical assistance to communities.

All clinical clerkships are designed to prepare the generalist who will be comfortable in the primary rural setting. A rotating balance specifically discourages specialty tracking during the predoctoral years. The result is that greater than 60 percent of our graduates are choosing primary care postgraduate placements.

The strength of clinical training in rural Maine rests within the consortia of the AHEC. The following illustrates the extent of clinical training this commitment allowed in 1990:

- Medical students, 481 student weeks.
- Master of Social Work, 432 student weeks.
- Nursing, 180 student weeks.
- Occupational therapy, 132 student weeks.
- Physical therapy, 68 student weeks.
- Physician Assistant, 120 student weeks.
- Family Practice Residency, 32 student weeks.

RURAL PHYSICIANS PRACTICE IN A MULTIDISCIPLINARY ENVIRONMENT

The effectiveness of a rural primary physician is dependent upon the availability of supporting services and the physician's knowledge, appreciation, and ability to work with those services.

To inculcate these values, University of New England College of Osteopathic Medicine students undertake multidisciplinary experiences. In the first and second years they are placed in training settings with therapists, social workers, nurse practitioners, and physician assistants to gain a professional respect and appreciate the complementary aspects of the skills each offers. Students work as part of an AHEC rural interdisciplinary team and as part of an AHEC rural interdisciplinary team and as part of a geriatric team involving the undergraduate Nursing, Physical Therapy and Occupational Therapy programs.

University of New England College of Osteopathic Medicine students are encouraged to engage in community service. Educational programs for patients, family, and elementary and high schools in the locality are provided. Health Promotion internships and summer school sponsored research activities are conducted.

While on AHEC services and while in community hospital services students live in the community not as visitors, but as members. They live the life with their preceptor attending board meetings, school meetings, community organizations and the like. This allows a student to gain a greater sense of the positive benefits of the lifestyle in addition to the science of medicine in the setting.

The University program supports a multi-organizational approach to enhance recruitment and retention. Such a program allows a maximization of resource utilization and talents not available to a single unit. Regional institutions, private colleges, the state university system, Maine Consortium for Health Professions Education, and the VA CHEP provide a steady collaboration. Rural clinical training of medical students, nurses, physician assistants, physical therapists, occupational therapists, and social workers from thirteen different institutions have joined this effort. This requires tremendous teamwork, confidence, and trust, but it works by accepting the paradigm of community education as the methodology for the outcome.

COMMUNITY-BASED EDUCATION—AN UNRESOLVED CHALLENGE

Maintaining quality and consistency for each student is costly and difficult. It requires the acceptance to think differently, to seek out new opportunities, and to have the courage of convictions. I ask the same of you so the words become actions to a new endeavor not simply a reformulation of the old. Flexner is right for the high tech tertiary science of medicine, but a new vision is required for rural practice.

There are many challenges. Insuring faculty comprehension, acceptance, and support of curriculum goals and objectives requires the faculty to be forward-thinking and able to let go of old ways. High quality faculty development and systematic monitoring and evaluation of the educational interactions that take place in a community based educational program are logistically complex. We need to insure that all students have core competencies, attitudes, and skills by requiring a balance of practice, study, and integration uniformly assessed by the preceptors and consistently employed. This demands that the rural faculty and the collegiate faculty must establish a mutual admiration, respect, and collegiality by regular interaction. Predoctoral medical education linkages to graduate medical education must be created, funded, and implemented to provide a mechanism of closure in this continuum. We need to overcome the preconceived unifocal processes inherent in the established perspectives of accrediting bodies and funding review panels.

There is a need to attract rural students and retain those most committed to serving in the rural community. Aspirations of the rural student must be raised. The expense of a medical education results in an indebtedness more easily liquidated in a high specialty practice than in rural America. The training locales in rural communities need a method for reducing expenses or diverting resources from patient care to education in order to participate in recruitment, training, and retention activities.

NEEDS SUMMARY

SHIFTING EMPHASIS

Public policy must validate the credibility of the primary pathway in community based education and develop the measures for that mission, including accreditation and funding.

Humanistic cognitive care must be recognized in training reimbursement and resource development, along with high technology in relative value.

Changing demographics in elder and rural populations and disease must be recognized. Supply and maldistribution of medical care providers can be addressed by a cohesive, comprehensive policy that looks at the medical practice and education as a continuum from medical school entry through clerkships into postgraduate training and practice.

PREPARATION

A broad preparation at the baccalaureate and predoctoral levels should recognize the scientific preparation for medicine, but also the art of medicine.

Recruitment and selection of students should have a primary humanistic emphasis.

There must be recruitment of community based practitioners as teachers and role models skilled in problem solving, critical thinking, and independent learning.

CLINICAL EDUCATION

Specific knowledge, attitude, and skills development must be identified, measured, and rewarded by the measure of a different paradigm.

Faculty must be selected by the paradigm.

Budgetary considerations must allow for the intensity needed in the paradigm so that input and outcomes are commensurate.

This can be accomplished and the outcome will benefit our Nation, but broad strokes are required.

I. There must be a closer connection between the National Health Service Corps and other similar programs such as AHEC and primary oriented medical schools to "close the loop", educating for rural service areas and reducing the debt load of medical school graduates.

II. A bold state and federal partnership is needed in sustaining programs that have proven successful in recruitment and retention, such as is proposed in the McCain-Graham bill for AHEC. Fellow panelist Dr. Charles Cranford can speak to this.

III. There must be an expanded recognition that rural service requires an alteration in policy for relative value and reimbursement. Until there is a sufficient differential to overcome the social and professional and professional isolation there will be no surge to rural areas. There must not be a dilution in the intent of the relative value system which should favor cognitive services and there must be a positive differential toward rural and primary services to provide inducement.

IV. Preventive services and team directed care must be accommodated in reimbursement and educational efforts.

V. Ultimately, and most critically, there is a need for a special recognition of and support for medical education programs truly committed to preparing primary care physicians for rural America. I have served on a number of review panels that consistently attempt to change those using the traditional paradigm as if to teach an old dog new tricks. What results is a patchwork without commitment or consistency. Why not recognize the validity of the two and reward the strengths of each. Under the current paradigm, we who are succeeding in rural arenas and primary care are still being measured by the research production, grantsmanship, and high tech paradigm. Until the alternative paradigm of community based medical education is equally recognized, this disparity and the maldistribution of primary providers and specialists, of urban and rural, of health promotion and organ disease treatment, will prevail.

Mr. HUMAN. Thank you very much, Dr. Bates. We are learning about some very interesting programs this afternoon.

Our next presenter is our first presenter today who currently serves full-time in the trenches, or at least most of the time in the trenches. I imagine some of her patients wonder where she is today.

She is a board-certified family physician in practice in Eutaw, AL, which is rural, believe me. Dr. Hullett practices with a community directed medical practice, which receives Federal support so it can offer comprehensive services in an area in which the poverty rate is high. She is a former winner of the National Rural Health Association's Health Practitioner of the Year Award, both because of her dedicated work as a physician, and as a policymaker for Alabama and for the Nation.

I first met Dr. Hullett at this Committee in 1988, so we are both here to do return engagements today. Dr. Hullett is involved in more good works than I could possibly list today, but the one she will talk about is an interdisciplinary team approach to training health care students that she is developing with support from Dr. Mullan's bureau, as well as some other activities she is involved in Alabama.

Dr. Hullett.

STATEMENT OF SANDRAL HULLETT, M.D., M.P.H., HEALTH SERVICES OFFICER, WEST ALABAMA HEALTH SERVICES, INC., EUTAW, AL

Dr. HULLETT. Thank you.

You have heard a great deal from academic based programs, and this particular program is a little different in that it is a community based program, and was initiated from the community. West Alabama Health Services, as stated before, is a 330-funded community health center. We receive approximately 50 percent of our funding from the Federal Government.

We do serve a heavily rural, black majority population that is most economically and medically in need. We serve six West Alabama counties, with approximately 40,000 active patients, with over 100,000 encounters a year. So we are not exactly a small network. But our patients are approximately 20 persons per 100 square miles. So we are very, very rural.

We have a large number of female patients, primarily because of our maternal and infant programs. But we also have a very large percentage of elderly patients, approximately 35 percent of our population area is 65 and above. About 76 percent of our patients are below the poverty level, more than double the equivalent population base. Most of our users are on Medicaid, Medicare, and uninsured people.

I am giving you this picture to show you the type of environment I work in, that may help you to understand some of the difficulty in finding providers.

As we look at the different providers in the area, and this is a six-county area, there were as of 1989—and it was till true in 1990—pharmacists were 22 for the area. That made a ratio of 3,950 to 1. Primary care physicians—this includes all which would be considered primary care physicians, which would be family practitioners, internal medicine practitioners, were 25. That's 3,476 to 1.

Registered nurses, 99—878 to 1; registered nutritionists, three, which gives a ratio of 28,965 to 1. Dentists were 10, a ratio of 8,690 to 1; and optometrists two, which gives a ratio of 43,448 to 1.

By all professional standards, we are having significant problems in getting health care personnel. So we are having this significant problem, and we were looking at what to do to resolve it. We had the University of Alabama, Tuscaloosa Campus, which is about 40 miles away from us, and the University of Alabama campus in Birmingham, which is approximately 100 miles away from us. We were having all this trouble obtaining health care personnel to serve people.

Over the past 10 years, this community health center has worked with academic institutions, the AHEC in our area, which is the VA AHEC out of Tuskegee, and was associated with Morehouse and Emory University. The University of Alabama did not see the need to apply for an AHEC.

We did get some people to come through our program. But again, we did not get enough people to see us. And we really feel that if we could get exposure, if we could get young people to see the program, to work in an area where first of all there was a need, in an area where there could be some form of reimbursement, the Federal Government has seen fit to fund 330 programs.

So we are now giving somewhat competitive salaries. We had an interdisciplinary team already on board with pharmacists, nutritionists, social workers, patient educators. We were not totally isolated. We would be an excellent site for medical training.

So since the University did not come to us, we went to the University. And after hearing of the interdisciplinary grant that was being funded by the Bureau of Health Professions, I went to the University of Alabama in Tuscaloosa to the branch of the medical school there, which is the Capstone Medical Center, to the School of Nursing, and the School of Nutrition, and asked if they would be interested in working with the program with ambulatory care training.

I went to each dean, and the deans sent me to a person that might be interested in their department. All the departments were interested.

Then we went to Birmingham, to the University of Alabama School of Dentistry, which is a premier school of dentistry by all national standards, and they too were interested in sending someone out. No dentist had been any further than Bryce Mental Hospital, which is in Tuscaloosa. No one had done community-based training.

We also went to the School of Pharmacy at Sanford University. They too had never sent anyone out of Birmingham to do any training, even though many of the pharmacists will work in small towns and communities.

After working together with these institutions, five different programs, we came up with a grant proposal that we thought could be funded, and we did submit and we are funded. We have had a total of 15 students since October 1990 who have completed the rotation. The students had opportunity to work in teams, formulate patient care plans, present case studies, utilize community outreach skills, and auditing medical records.

They spend 75 percent of their time in clinicals and 25 percent of their time in community experiences. We also share a partnership with the AHEC in our area at Tuskegee, as I stated before, and the Geriatric Training Center at the University of Alabama Medical Center.

We have found this program to be extremely interesting and stimulating to our staff. We find it has a way of recruiting and retaining our medical and other staff. People like teaching and working with young people, they really enjoy it. This is a tool that we have and are using as recruitment and retention.

The students work with us also in another aspect. They help us in our health prevention and promotion. They spend 25 percent of their time in the community, which is dedicated to their particular point.

I would like to close—I don't have a whole lot to say but to say that community health centers are an ideal source of ambulatory training sites. There are board-certified, board-eligible physicians. Many are young, I'm the oldest person in my group of 12 people. They are young, interested in teaching. The communities have a great wealth of training resources, if you want to call it that. The community boards have accepted the training program, because they too see it as a potential way of introducing young people to the rural communities. And we are doing it in a positive way.

Right now, three of the pharmacy students who have come through are working within 35 miles of our area. One RN student we really wanted for ourselves did not stay with us, but is within a

35-mile area and does work part-time with us. So in this short period of time, we have already been able to increase the health care professional personnel in our area.

We do think this is the way to go for the future.

[The prepared statement of Dr. Hullett follows:]

TESTIMONY BY SANDRAL HULLETT, M.D., M.P.H., HEALTH SERVICES DIRECTOR, WEST ALABAMA HEALTH SERVICES

Today many Americans lack access to an ongoing source of primary care and, therefore, to essential clinical and primary care services. This problem is disproportionately demonstrated in rural communities. The problems of access in these areas are both disproportionate distribution of services and inability to pay for services.

Rural areas are populated by the aging and the very young, both groups demand services given best by primary care providers. However, the commitment to primary care practice (by medicine, nursing and others) has declined steadily in the last decade.

Many earlier attempts have been made to increase emphasis on primary care. The following was noted by Polizer in the July 6, 1991 JAMA.

- 1) Recognition of Family Practice as a medical specialty
- 2) The establishment of a number of new state supported medical schools with mission statements that include primary care training and the multidisciplinary team approval as control theme
- 3) Federal funding for primary care training, including physicians, dentists, nurse practitioners, certified nurses-midwives and physicians assistants
- 4) Federal Scholarship support for medical education through the National Health Services Corps and
- 5) Federal Support for community and migrant health centers.

With all the attempts to emphasize primary care it continues to deteriorate, the question is asked why? The cause is multifactorial but the academic medical training programs seem to set an environment in which few students can conceive of a role for primary physician.

A change in present medical education is suggested and desired. Needed is a curriculum specifically designed to train students to assess rural needs and deliver services to meet the essential needs, thus providing a healthier rural America. Such a program should be community based with primary care role models.

I wish to share with you today West Alabama Health Services (WAHS) experiences with the Rural Interdisciplinary Training Program another response toward increasing primary care providers.

West Alabama Health Services accepts the challenge to be an integral component in the health education system and to improve the quality of rural health. This goal has been assisted by receiving an interdisciplinary training grant from D H H S.

I will describe WAHS, the populations served and the interdisciplinary program. West Alabama Health Services is 330 funded community health centers providing primary comprehensive care for six rural West Alabama Counties.

The user profile indicates WAHS is heavily used by the area's black majority (approx 40,000 user with 91% non white), the population that is most in need economically and medically. Female patients compose 65% of the user totals, in part a reflection of WAHS' maternal and infant care programs and its preventive care program for young children. There is also an extremely large elderly population over 37% of the service areas population and large population 16 and below.

Analysis of income and insurance data indicate that WAHS is reaching the neediest segment within the area. 76.6% of all users have income below the poverty level, more than double their equivalent component in the population bases, most WAHS users are Medicaid, Medicare recipients and the uninsured.

The leading causes of death in the area are heart disease, cardiovascular disease, cancer, diabetes and complications associated, accidents, and pneumonia. The most common health problems are hypertension, diabetes, and obesity.

The following ratio of health providers reflects the health care needs of the area.

Health providers	Number	Ratio
Pharmacists	22	3,950:1
Primary care physicians	25	3,476:1
Registered nurses	99	878:1
Registered nutritionists	3	28,956:1

	Health providers	Number	Ratio
Dentists.....		70	8,690:1
Optometrists.....		2	43,448:1

By all standards of professional shortage, the above members are quite significant. According to the State Hospital Association, there is a growing need for trained personnel within the state, particularly in the rural area. The following vacancy percentages published by the Hospital Association for the rural members further reflects the problems.

	Percent
Physical therapist.....	28.14
Registered nurses.....	10.89
Licensed practical nurses.....	16.55
Pharmacists.....	4.86
Medical technologist.....	9.30
Radiology technologist.....	4.20
Lab technicians.....	5.00
Respiratory therapist.....	11.64

West Alabama Health Services is the lead agency for the Rural Alabama Health Professional Consortium which sponsors an interdisciplinary training program in rural Alabama. This training program is the result of all Interdisciplinary Training Grant for Health Care Profession and for Rural Areas. It was funded under the Bureau of Health Professionals, DHHS, of the grants funded this was the only one based at a community health center.

The Consortium is as cooperative venture with four academic institutions. Samford University School of Pharmacy; University of Alabama Capstone College of Nursing, College of Community Health Sciences and College of Human Environmental Sciences; University of Alabama at Birmingham School of Dentistry, University of Alabama in Huntsville School of Nursing and West Alabama Rural Health Consortium (a small rural hospital venture). There are five disciplines represented; Dentistry, Nursing, Medicine, Pharmacy and Nutrition.

The trainee practicum will consist of 75% clinical and 25% community experiences. The community experiences include hospital care, home visitation, community health screening and health education presentations to schools and community groups. The program involves exposure to rural health to both students and university faculty. There are two faculty work-shops to address area rural health issues and faculty rotate with students to review case presentations.

Since October 1, 1990, 15 students have completed their clinical rotation. The Students have had the opportunity to interact as teams formulating patient care plans, presenting case studies, utilizing community outreach skills and auditing medical records. This partnership has been enhanced by the AEHC from Tuskegee VA System and the Geriatric Training Center from UAB medical center. The students observe the providers at WAHS functioning as a team and see that the team approach is essential to small towns and rural communities.

We at WAHS see this program and similar programs as an important method to introduce students to rural health and the providers who deliver the care. Such relationship serve to dispell the erroneous notion that rural providers are inadequate and incompetent.

We think the experiences of working with the underserved and underprivileged in their environment will enhance the humanity of the students rotating in any area they may finally work. We also find this experience stimulating to the staff and providers and hope it serves as both a recruitment and retention tool.

The program is new and not quite a year old, yet three pharmacists former students have located in two surrounding communities. One RN Nursing Student was lost to the VA System in Tuscaloosa but is willing to work part time. The number of students thus far has exceeded the anticipated number of students projected for the project's first year. The project continues to operate in it's first year. The institutions are eager for students to participate in this unique and exciting learning adventure.

RECOMMENDATION

I would like to conclude with the following recommendations. The decision to choose a primary care specialty and to practices in an underserved and rural area

can be influenced if the student is exposed early in their training to good role models. This process can be influenced by:

- (1) Continued funding for Community and Migrant Health Centers, National Health Services Corps,
- (2) Active recruitment of rural students and minorities in secondary schools to direct them toward the health professions,
- (3) Re examine admission criteria to make more favorable admission policies for students who are more likely to practice in small towns and the underserved areas,
- (4) Encourage partnerships of community health centers and academic institutions,
- (5) Support some form of financial reimbursement for ambulatory care centers that serve as community based education sites.

I would like to thank you again for this opportunity to speak.

Mr. HUMAN. Thanks very much, Sandral. We appreciate that.

Our next speaker would probably just as soon not be introduced by me. Loren Amundson and I talked last month in Sioux Falls. There he helped Governor George Mickelson host the National Governors Association hearing on rural health care, and he was introduced by Governor Mickelson. He has already been introduced this afternoon by Senator Pressler, and I don't believe he ordinarily accepts introductions by persons of lower stature, but I am just going to add a few things.

Dr. Amundson is Director of the South Dakota Office of Rural Health Care, which has just received one of 38 Federal grant awards from my Office to enable it to expand its excellent activities. Maybe on that basis he will accept this introduction.

Dr. Amundson is board-certified family physician who practiced in Webster, SD, and still does practice part-time in Sioux Falls. He was the founding chairman of the Department of Family Medicine at the University of South Dakota Medical School and still serves on the faculty.

Nationally, Dr. Amundson services as Chairman of the Residency Review Committee of the American Academy of Family Practice. So if we have trouble with structuring graduate medical education, we obviously have the man we can complain to right here.

Dr. Amundson will summarize his work in South Dakota, and the subject of graduate medical education and family practice.

Loren.

STATEMENT OF LOREN H. AMUNDSON, M.D., DIRECTOR, SOUTH DAKOTA OFFICE OF RURAL HEALTH, SIOUX FALLS, SD

Dr. AMUNDSON. Thank you, Jeff, for the kind invitation and to Jennifer for the invitation to come to Washington, and to Senator Pressler for his kind comments. Larry and I grew up 17 miles apart. I am a lot older than Larry is, but we do have many mutual friends.

Jeff mentioned Governor George Mickelson, who is our biggest advocate of rural health in South Dakota, who is Chairman of the NGA Agriculture and Rural Development Committee, and hopes to come out with their health care reform package containing many elements in rural health.

Welcome from Dean Talley, the Dean of our community based family practice oriented medical school, which has had 21 percent of its graduates enter family practice residency in the 15 years since we went from a 2-year to a 4-year program. We have 27 rural training sites and over 180 clinical faculty.

Secretary Sullivan and Dr. Bob Harmon have put together a real A-Team from my perspective, in Dr. Mullan, Dr. Marilyn Gaston, Dr. Don Weaver of the National Health Service Corps, and Dr. Marc Rivo, who was introduced to you this morning, the head of the Division of Medicine. I think that portends well for us.

I would like to respond to the gentleman's comments of this morning regarding the number of hospitals in South Dakota. I didn't know we were that well-known, but we will take what we can get in these times of lean resources. Actually, our strategies process in rural health contains 11 issues, developed in 1990, that we are now working on. Actually, the first and most important one is rural hospitals.

I am happy to report to him and to you that we are now developing a rural hospital action plan, and developing criteria to identify access-critical as well as at-risk hospitals, and also are developing a State plan to augment alternative model programs that are now under development, such as EACH/ RPCH.

There is an important co-factor in rural America, the emergency medical systems, which really needs attention if we are going to have any kind of a health care delivery system. So if you can develop the data on the emergency medical systems as well, I think it will be helpful to us.

South Dakota, which is my native State, is 60 percent frontier, having less than six people per square mile in those 32 counties where 22 percent of the population resides. Parts or all of 43 of 66 counties in the State are in health professional shortage areas. Over 13 percent of our total land mass is Indian Reservation land, 22 percent of the frontier land being reservations. Over 7 percent of the total population of South Dakota is Native American. Yet only 9 percent of South Dakota physicians practice in frontier areas.

Policies to develop health care in South Dakota have often included provisions to address the special problems in delivery and health care in rural areas. Recently, however, these policies have received renewed scrutiny, with the development of our Office of Rural Health, of rural hospital closures, as was discussed, and other concerns relating to access to quality health care at reasonable cost.

Primary care physician recruitment and retention is a continuing problem in South Dakota as elsewhere across our Nation. In South Dakota, we have taken positive steps in the past few years to help. We have enacted programs to reimburse family physicians for practicing in communities under 2,500, a State program to waive tuition for medical students planning careers in primary care, who agree to practice in rural, underserved areas after they graduate from training. And more recently, financial incentives to train family practice residents in rural communities.

In no other setting does the family physician play such a prominent role as in rural health care delivery. Somehow our educators and policymakers have the mistaken impression that the special requirements for residency training and family practice do not allow time away from the family practice center, thereby preventing the residents from participating in rural health care.

As a matter of fact, in my nearly 6 years on the Residency Review Committee, I find that sometimes there is a lot of confusion between the RRC and one of the Federal acronyms, the IRS. They seem to confuse us, and when we are coming to visit them, they wonder who is really coming.

The Residency Review Committee would call your attention to sections of the special requirements which state that residents may spend time away from the family practice center in outside rotations designed to meet the needs of their training. The educational value of these rotations must be clearly documented. This section allows 4 of the 36 months in rural rotations if they are at such distance from the family practice center that continuity would be disrupted.

The requirements also mandate that there be elective experiences in a range of 3 to 6 months, and some of this time may be used for rural experiences if they do not involve interruptions in excess of the limit.

Also, portions of the required curriculum may be located in rural areas, if the experiences comply with the intent of the requirements involving sufficient numbers of patients, residents being appropriately supervised, and if they are suitable for training future family physicians. Some programs use the "1 and 2" format, providing the first year of training in conjunction with the core program, and years 2 and 3 at another more rural site.

Some programs which provide all 3 years of training at one site use satellite clinics for ambulatory experiences in rural areas to which residents may rotate for a number of half days per week without interrupting continuity of care in the family practice center for their panel of patients.

So to dispel some misconceptions, perhaps, the special requirements allow several ways to incorporate rural experiences for residents in training.

The Residency Review Committee for Family Practice encourages, considers, and often credits such programs which fulfill the special requirements for residency training, while providing this training in these alternative models.

Recent examples of interest in such alternative models include a report on an invitational symposium on "Rural Health: A Challenge for Medical Education," held by the Association of American Medical Colleges, the AAMC, and a monograph on "Special Considerations for the Preparation of Family Practice Residents Interested in Rural Practice" produced by our specialty society, the American Academy of Family Physicians.

Alternative rural training tracks and sites provide experiences at rural ambulatory sites. Examples include programs currently imposed or under development at Spokane, WA; the University of Kentucky; the University of Nebraska; the State University of New York at Buffalo, where Dr. Dave Holden is the Department Chairman, and has been with us today; and at Greeley, CO.

The Residency Review Committee for Family Practice is justifiably proud that its programs have trained the vast majority of physicians entering rural practice in this country during the last two decades, and will continue to do so in the future. Almost half of graduating family practice residents are locating their practices in

rural areas with populations of 25,000 or less. As of July 1991, there are now 390 accredited family practice residencies, and the number is increasing each time the committee accredits programs. As we stated earlier today, what is needed are more committed applicants to fill offered positions in these programs.

The medical schools have an important role, as we have heard today, in training and encouraging students to enter primary care residencies, federally defined as family practice, general internal medicine, and general pediatrics. This may sound like the great philosopher Yogi Berra, when he said "Sounds like déjà vu, just like the last time." Currently less than 30 percent of the U.S. medical graduates are entering these three primary care graduate education programs. Interest in such outcomes on the part of medical schools, I believe, can be piqued by appropriate incentives, including tying outcomes to Federal funding, such as the National Institutes of Health and other grants.

The Federal Government must also use its limited resources wisely, to assure outcomes dedicated to improving the health of all its citizens, as was mentioned. Medicare funding of graduate medical education through the Health Care Financing Administration must be weighted in favor of primary care training. Hospitals receiving these direct and indirect educational reimbursement dollars must be required to provide documentation that such reimbursement is actually committed to operation and enhancement of such training programs and not left to innovative funding formulas devised by individual sponsoring hospitals. HCFA must be required to develop linkages with the Health Resources and Services Administration to equate support to need. Ten billion dollars in biomedical support through NIH and \$4.7 billion in Medicare GME reimbursement hardly equate with the \$150 million available for primary care graduate medical education programs supported through Title VII grants.

Thank you.

Mr. HUMAN. Thank you very much, Loren.

I should have mentioned when I introduced Sandra that Senator Richard Shelby was hoping to be here this afternoon to do that introduction. He has not been able to get here so far, and I know he feels badly about that. One of the reasons Senator Pryor wanted to be at this workshop today is to do what I am now going to do, which is introduce Charlie Cranford.

Charlie has been an advisor to Senator Pryor for many years. Currently Charlie is the Director of the Arkansas Center for Rural Health at the University of Arkansas. He is a former Assistant Vice President for Administration at the University of Texas Health Sciences Center in Austin.

Before these positions, Charlie cut his teeth, so to speak, in a dental career with the U.S. Public Health Service in places like Lame Deer, MT, and Fort Defiance, AZ. He also has a Master of Public Affairs degree, and has served as a management and policy consultant for many health care organizations on critical decisions that they have to make and critical programs they have to implement.

Today Charlie will describe, among other things, the Arkansas Area Health Education Center which he heads.

STATEMENT OF CHARLES O. CRANFORD, D.D.S., M.P.A., EXECUTIVE DIRECTOR, AREA HEALTH EDUCATION CENTERS PROGRAM, LITTLE ROCK, AR

Dr. CRANFORD. Thank you, Jeff. Being called a model that works is a heavy responsibility to bear. But I think that being the last person on a five-person panel at this hour in the afternoon is even heavier. One of my cardinal rules for after-lunch speeches is that if I can't be funny, I will be brief. And I don't think I can be funny this afternoon.

I am pleased to have had the honor of being invited to present our Arkansas AHEC program. We are very proud of this program. I won't devote the few minutes that I have to going through the various elements of our AHEC program. First of all, I have a handout that I hope each of you have. And in that handout, the elements of our program are described.

When I came back from lunch, I didn't see any left on the table. If there are any of you that didn't get it my telephone number is 501-686-5260. I will be happy to send you one.

In Arkansas, we have a longitudinal program. It begins with the recruitment of students for our various colleges, and it extends through educational opportunities in each year of the College of Medicine. There are also several opportunities during the College of Nursing curriculum and the College of Pharmacy curriculum. We have educational opportunities in allied health programs, and, we conduct family practice residency programs out in the State. In the handout, I have a series of maps that show what's happened to the graduates of the AHEC based family medicine programs.

We also deliver a lot of continuing education through the AHEC program. As our chancellor says, "AHEC is a fundamental part of the way we educate students in Arkansas." I think that pretty well sums up our program.

In my remarks this afternoon, I would just like to make a few observations about our program that we have learned over the years. We have just completed our 18th year of the Arkansas program. It is truly the principal means of decentralizing health professions education in Arkansas. Last year we provided training experiences for over 450 students from UAMS colleges.

The program is a statewide organization that consists of family practice residency programs, affiliated teaching hospitals, libraries, voluntary faculty, preceptors, ambulatory care centers, private medical practices, many area advisory councils, and other special purpose health care institutions, such as community health centers, health departments, etc.

The statewide classroom we have in Arkansas has brought academic stimulation to practitioners in communities throughout our State. That kind of involvement lessens the isolation that many health professionals feel when practicing in rural areas. Students benefit from receiving hands-on experience in settings that are similar to those in which they will practice.

Communities benefit from the program by having strengthened health care delivery systems. Patients benefit by having a higher quality of health care, more accessible to a larger part of the rural population.

I think the early success of our program can be attributed to the support of a large number of farsighted people. They were from the university, from affiliated teaching hospitals, from advisory committees, and the Arkansas General Assembly. We had immense help from the Governor's office at the time the program was started. In the early days of our program Senators Pryor and Bumpers were Governors of Arkansas. They were of immense help while this program was getting underway. The Arkansas program is largely State-supported.

There are many health practitioners who volunteer in our program—over 500. They are the individuals to whom we can say we owe the continuing success of the Arkansas program.

There have been a number of spinoffs from the original AHEC program. One is a summer program for high school students. Another is a recently started center for rural health, and that center includes a rural hospital assistance program. It also includes a special program initiative to address health care needs in the Mississippi River Delta counties of Arkansas, a very depressed area of our State. And finally, we have developed a rural health research program that is a spinoff of the original AHEC program.

Program development and evolution have been essential to our program. Successes can turn into failures if we fail to see the program as a part of a much bigger picture, if we fail to seek to collaborate with others, if we do not evolve to address changing needs and opportunities in our States.

In those States where AHECs have been seriously embraced, a system has been put in place that can assist in the next major priority that the Federal and State governments should undertake. That priority should be the development of regionalized, integrated, comprehensive systems of health care.

AHECs have helped to develop strong regional medical centers in our State. But if we stop there, the job is only half finished. We should now assist in the development of systems that integrate smaller hospitals and rural clinics and transportation systems and public health programs and community based programs into regional health systems that will fulfill the promise of access to health care for all rural citizens.

There is no time to mention all of them, but I would like to call your attention to several suggestions in my paper for improving rural health care. One I did not include, but I would like to mention, is that public health education is often not taught to our rural citizens. AHECs should accept a role in teaching behavioral change leading to healthy lifestyles and accepting responsibility for one's own health—responsibility for the reduction of risk factors.

We need to teach rural children at a very young age to take charge of their health. And we should work with health departments and schools of public health to see that it is done.

In closing, I want to say that the mission and the vast array of affiliated organizations and individuals have made the AHEC program an ideal vehicle for dealing with rural health care problems. It is certainly not the single answer. But AHECs can be a strong partner with health departments, rural hospitals, local governments, health care professionals, cooperative extension services,

community health centers and private foundations in the implementation of solutions.

I believe that collaboration should be the key word and guiding principle of this decade. Collaboration should exist at local and State levels, and it should be encouraged among Federal agencies. I have seen it work well in our programs at each level.

I thank you for the opportunity to present the Arkansas program to you this afternoon, and I would be happy to answer questions later. Thank you, Jeff.

[The prepared statement of Dr. Cranford follows:]

LINKING MEDICAL EDUCATION AND TRAINING
TO RURAL AMERICA:
THE ARKANSAS AHEC PROGRAM



University of Arkansas for Medical Sciences

Charles O. Cranford, D.D.S.
Executive Director
Arkansas AHEC Program

LINKING MEDICAL EDUCATION AND TRAINING
TO RURAL AMERICA:
THE ARKANSAS AHEC PROGRAM

AHECs were first recommended by the Carnegie Commission Report on Higher Education in 1970. In the following year, the Congress enacted legislation to provide federal support for the development of AHECs in medically underserved areas, as the Carnegie Commission recommended.

The Arkansas AHEC Program began in 1973 and completed its 18th year of operation on June 30, 1991. With six strategic locations throughout the state, the AHEC program remains the principal means of extending and decentralizing medical and other health professions education in Arkansas, this year providing quality training experiences for more than 450 health profession students. The overall mission of the AHEC program is accomplished each year through a statewide organization of family practice residency programs, affiliated hospitals, libraries, voluntary faculty, preceptors, ambulatory care centers, private medical practices, area advisory councils and non-profit foundations, and affiliated special purpose health care institutions.

As the catalyst in this network, the AHEC Program functions as a two-way communication vehicle, extending the University of Arkansas for Medical Sciences programs to all areas of the state, and providing a channel through which information concerning health needs, problems and the views of health professionals and the general public can be conveyed to the medical center.

The Arkansas AHEC Program is staffed by full and part-time faculty in medicine, nursing, pharmacy and allied health professionals. They are supported by more than 500 volunteer clinical faculty.

Entering sophomore and junior medical students are introduced to practice in smaller communities in Arkansas through the rural preceptorship program. Students work one-on-one with primary care physicians in rural communities for four weeks. In 1990-91, the program had a total number of 94 students with 91 physicians located in 49 rural communities.

Elective courses offered through the AHECs offer senior medical students an opportunity to participate in the private practice of medicine. Electives range in length from four to eight weeks and cover all primary care specialties and most of the medical subspecialties. The 1990-91 senior elective rotation program provided training for 97 medical students who took 150 rotations.

This year a required third year clerkship in family medicine will be initiated for all medical students. Approximately 85% of these clerkships will be located in AHEC sites.

Nursing students from UAMS, other universities in Arkansas, and surrounding states participate in AHEC clinical rotations. In 1990-91, a total of 90 nursing students rotated through the AHECs.

Directors of pharmacy education attend daily rounds with the residents and are available in the family medicine clinic. Transition to an all Pharm.D. program, currently underway, will make AHEC student rotations a basic part of the curriculum.

Allied health professional education programs have developed in association with regional hospitals and schools throughout the state. Programs have been established in respiratory care, radiologic technology, physical therapy, medical technology, and emergency medical technician-paramedic education.

The AHEC library network serves as a major medical and health professional information resource, for over 40,000 health professionals, students, and others. Linked to the UAMS central library, the five-state (TALON) region and the National Library of Medicine, a telefacsimile system permits almost instantaneous document delivery throughout the AHEC system.

A major focus in each AHEC is the provision of continuing education, and in 1990-91, the AHECs offered over 1,300 conferences for continuing education credit, with over 17,000 attendees.

It is clear that information delivery systems have become more essential in the practice of rural health care, and the development of such systems is possible with today's technology. AHEC is the existing model that can serve the information needs of rural health care providers, whether they be delivered by traditional or highly technical systems.

Over the next few years, a technology transfer network will be established for disseminating medical practice guidelines to health care providers. The network will educate providers in using such guidelines. AHECs are ideally positioned to provide this network. AHECs already link academic resources of university health science centers with local planning, educational and clinical resources in a system to provide educational services to students, residents, faculty and private practitioners.

A primary goal of the Arkansas AHEC program has always been to improve the supply of family practice physicians. On average, 25% of UAMS college of medicine graduates go into family practice--double the national average for medical schools. We believe the AHEC Program is responsible for that.

Another major goal is to improve retention of primary care manpower in Arkansas. Eighty-two percent of AHEC-based family practice residents remained in Arkansas after graduation, while only 64% returned to the state who went elsewhere for their training.

Another major goal is to improve the distribution of family practice physicians within Arkansas. AHEC has been successful in improving the distribution of physicians in several ways: 1) Only 7% of AHEC-based program graduates practice in Pulaski County (Little Rock), compared with 37% of the family practice graduates who trained at the university. 2) Fifty of the 75 Arkansas counties have received family practice physicians who graduated from AHEC-based family practice residency programs. 3) Currently 40% of the graduates of AHEC-based family practice programs are locating in towns with populations under 10,000. 4) Since 1980, one-half of the new physicians in 20 counties in the southern half of the state have been graduates of AHEC-based family practice programs. 5) Almost 70,000 patient visits occur in AHEC teaching clinics, and many of the babies of indigent mothers are delivered through these clinics. 6) Sixty-eight percent of the clinical rotations by medical students in AHEC sites are in primary care. Specifically, 43% of these rotations were in family medicine.

We are pleased to enjoy respect and support throughout the state, but we work hard at it. The amount of concurrent internal and external coordination required is greater than any other program on the campus, but it produces a program that is worth the effort. The statewide classroom in Arkansas has brought academic stimulation to practitioners in communities throughout the state. That kind of involvement lessens the isolation of a health professional practicing in a rural area. Students benefit by receiving hands-on practical clinical experiences in settings similar to that in which they will practice. Communities benefit by having a strengthened health care delivery system. Patients benefit by having a higher quality of health care that is more accessible to a larger segment of the population.

We have achieved a de-centralized educational process for health professions education, but there is much more to be done. The de-centralization achieved has been largely in partnership with the major regional hospitals. That is a significant accomplishment and has had a beneficial impact on the distribution of primary care physicians in the various sectors in the state, but we have not yet achieved bringing the successful small-town community practice into the educational process. Students need to have a longitudinal exposure to successful small-town primary care practitioners. An exposure to a successful, happy practitioner in a rural practice can provide the role model needed to encourage a physician in training to consider emulating his rural-based mentor.

Decentralized family practice residency programs in community hospitals benefit rural areas. However, it is difficult to attract full-time faculty to teach in these programs. More incentives are needed. I recommend that federal loan forgiveness be allowed for physicians who serve as full-time faculty in family practice residency programs from which not less than 50% of the graduates established practice in non-metropolitan areas in the prior three years.

Another way of improving instruction of family practice residents in community hospitals would be to encourage through grants the placement of advance level OB-GYN residents in community hospitals having residency programs in family practice.

Health science universities have educational and clinical resources that could be used to strengthen rural hospitals. The federal government could help encourage those linkages by providing federal matching funds for university health science centers that establish on-site educational and clinical affiliations with rural hospitals for the purpose of strengthening those hospitals.

A collaboration that can benefit rural health care systems is to form linkages between Area Health Education Centers and Cooperative Extension Service Programs. I recommend that, within the Department of Agriculture, a grant program be developed for Area Health Education Centers that develop model collaborations with Cooperative Extension Service Programs to improve rural experiences of health profession students, expand consumer health education, and develop support systems for health professionals located in rural areas.

Schools of Public Health can play important roles in the development of preventive health services, health education and health promotion programs. Some states do not have Schools of Public Health. I recommend that grants to Schools of Public Health be provided for those schools that will form affiliations with health science centers in states without schools of public health. In such affiliations, not less than 50% of the program initiatives should be rural based and conducted through Area Health Education Centers, if such centers exist within the state.

Residents of rural areas should be encouraged by both state and federal governments to expend health care dollars within their rural communities. A way of providing such an incentive would be to provide a deduction from gross taxable income of all health care expenditures for individuals residing in rural areas and making such health care expenditures to health care providers located in rural areas. This would likely have a small impact on state and federal budgets, but is likely to be a decision factor in the choice of health care providers by rural residents.

The recruitment of students into the health professions from areas designated as health profession shortage areas or medically underserved populations should be a priority goal of local, state, and federal governments. Part-time work experiences for high school students residing in such areas can influence career bonding and community bonding at a time when many career decisions are being formed. I recommend that federal matching funds be provided to city or county governments that support apprenticeship/part-time work experiences in critically needed health and health related professions for high school students residing in health profession shortage areas (HPSA) or residing in medically underserved population groups. The work experiences should be in the area in which the student resides, not in a distant medical center.

A new "state-supported AHEC" authority is being recommended by the National Organization of AHEC Program Directors. This new authority would allow the federal government to continue to support AHEC programs that have acquired matching funds through state/local support. Through this mechanism the federal government would acquire the leverage to have established AHEC networks continue to be responsive to federal goals concerning access to health care services in underserved areas.

Finally, the AHEC Program is a proven program for addressing many of the health-care problems that affect rural areas. The goals of the AHEC Program are part of the same priority goals of governments and rural communities concerned with improving health-care delivery and with reversing the deterioration of rural health care systems. The mission of the AHEC Program and its vast array of affiliated organizations and individuals has made the AHEC Program an ideal vehicle in Arkansas for dealing with rural health care problems. It is not the single answer to these problems, but it can be a strong partner with health departments, rural hospitals, local governments, health care professionals, cooperative extension services, community health centers and private foundations in the implementation of solutions.

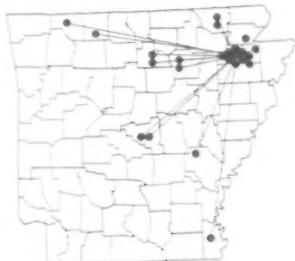
An AHEC is a good place to nurture a set of programs which target support for health manpower training activities in areas of greatest needs and across disciplinary lines. An AHEC is a good place to convert the theoretical into applied solutions - a good place to teach and demonstrate practical solutions to today's students who will be tomorrow's professional leaders. An AHEC is a good place for encouraging and facilitating involvement of individuals, institutions and organizations eager to collaborate. An AHEC is a good place to maximize scarce resources. An AHEC is a bridge between health sciences and the community -- a bridge between solutions and needs.

ARKANSAS AHEC RESIDENT PRACTICE LOCATIONS

AHEC South Arkansas 1982 - 1989

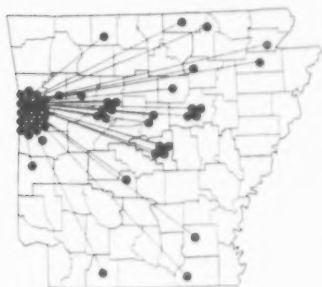


AHEC Northeast 1982 - 1989

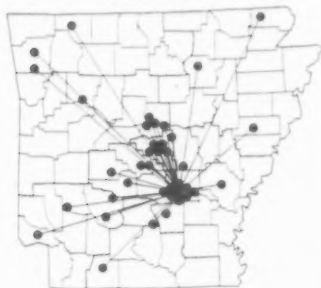


ARKANSAS AHEC RESIDENT PRACTICE LOCATIONS

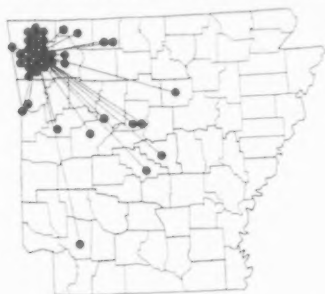
AHEC Fort Smith 1976 - 1989



AHEC Pine Bluff 1978 - 1989



AHEC Northwest 1976 - 1989



Mr. HUMAN. Thank you, Charlie.

I want to thank all of our panelists, and say goodbye to Dr. Melnick, who wants to get away from this cold, wet weather, and get back to the land of the sun. I think we have heard a great deal about programs that work this afternoon, how hard they are to get started and funded. But we have heard a generally optimistic perspective, that much more can be done by these institutions and by other institutions as well.

We are now open for comments and questions regarding the programs we have had described. Even more importantly, we would like to hear more about other model programs that you folks may direct or know about, and we would welcome further observations and recommendations about Federal policy and health professions education generally.

We would like each person to introduce themselves and then offer their observations. Yes, sir?

STATEMENT OF JOHN DAVIS, COOPERSTOWN, NY

Dr. DAVIS. John Davis from Cooperstown, NY. I was also struck by the rather positive note this afternoon that since crying for money isn't going to do any good since there isn't any, it is nice to hear people are actually doing something. I was struck by Dr. Hullett's comment as much as anything else, which was that people like teaching and working with young people.

That really is—as a medical teacher, that struck a chord here. I hope it struck a chord with others. I gather most of you are medical teachers.

We have two programs in Cooperstown, one with Dartmouth and one with the University of Rochester, wherein third-year medical students come out for only a short time to our outreach satellite centers. They have a terrific time, and so do all the people in those health centers working with them. It is a very positive experience all the way around.

I have no idea yet whether there will be any longitudinal payoff or how many of these students will actually end up in rural practice. But there is certainly a lot of excitement out there, and it is energizing the rural centers, as well as possibly interesting some students. By the way, even Columbia is interested now in getting involved, and sending its students up into the country, its third-year students. So we think we have made some impact there.

I would challenge all medical schools—everybody ought to be doing something, whether it's the 9-month Minnesota model, whether it's the 5-week family practice Dartmouth model, whether it's the 6-week University of Rochester internal medicine model, whether it's the Upstate Medical Center 9-month model, or whatever it is. Every medical school ought to be out there looking into the community and getting together with the community and getting their students out there. That's one thing we can do.

Unfortunately, nobody's going to pay for this. But it probably is not quite as expensive as you would think, in terms of the fact that students do add a certain amount of sophistication and help out there in the clinics. It's not just a total loss for the clinics.

Thank you.

Mr. HUMAN. Right on, Dr. Davis.

Dr. HULLETT. One of the things we are looking at during this 3 years is to actually address that issue, especially in community health centers. We have a productivity mandate that we are supposed to meet. And many community health centers do not want to work with students because they think that with no real proof that they actually slow up their productivity.

We feel from our experience—and we have been working with students before this grant—that third-year students do slow you up a bit in the beginning. It's all according to how long they are with you. Usually after about a week, they don't slow you up.

In fact, a lot of the patients love the amount of time they spend with the patients. I can't spend the amount of time that the students spend with the patients. But the patients love the attention, especially if they are accepted in the community, and it is accepted in our community.

So that is something that we can look at. But we are doing some time studies, and we hope by the end of this 3 years to show whether it does affect productivity, and how the students work in the community health center setting that does require certain federally mandated services.

Dr. AMUNDSON. I was medical director for nearly 10 years of a community health center that integrated family practice education into a Title 330 center. Those of us that did that still have scars. But those scars have now turned into beauty spots, because it has now become federally recognized, and a model, one of the models of integration. It just needs to occur more, and Dr. Hullett with whom I had the opportunity to work on a Federal grant review team, exemplifies what can happen and shows you what one person can do.

Dr. LEONG. I'm Darryl Leong, from the National Association of Community Health Centers. First I want to comment on the concept of teaching community health centers, and to take this comment a bit further. I want your reaction to this. Not just with health professional students themselves, but even for students before they enter the health profession in terms of finding and recruiting the right kinds of students that are going to come back and practice in these communities, minority, disadvantaged, rural students as well.

The first community health center, or the second one, Mount Bayou, actually had offers of education. It was funded by the OEO as part of a health center. The job for this office was to recruit and find students that would actually enter health careers, sanitarians, nurses, doctors, and dentists. They actually have some data that should be coming out to show that this office was successful.

But at the health center itself, they see patients every day, they are part of the community. They are excellent recruiters for future students. I just wanted to comment on that for some of the panel members.

Dr. HULLETT. We also do that in our area, not as organizers and an office, but a part of the responsibilities of the students we have now, 25 percent is community based, and part of that time is they do speak to the high schools and elementary schools, too. We go from grades 6 through 12. The teams make a presentation. They

decide what they want to present and then present it as a team, with the different disciplines.

This exposes the students to the fact that there are other disciplines. Most kids know there are doctors and nurses, but they are not really familiar with all the other things they can do. So we like to expand the role and use the other health care professionals. Because in small towns and rural communities, we do work as teams. The pharmacist is just as important as the doctor. In fact, if you have ever known a small-town pharmacist, he is on call 24 hours a day, just like the doctor. They are always being called in the middle of the night to go mix up some medicines.

But the interrelationship of those health care professionals is very important. We attempt to address that issue.

Before that, we worked with the Macy Foundation in developing a program where they train high school students to look at the health professions. Right now, there is a long time—you don't see benefits from these things for a long time. You are talking about starting with the sixth grade, and then they have to go through high school, secondary, undergraduate, and then college. So to professional schools it's a long time.

We now have a group that has finished college, and we have five who went on to health care professions. Most of them are medical. And some people consider the program a failure because there were only 5 out of about 30 something.

But they didn't look at the fact that about 20 finished college. And in an area where that has never really occurred, to have that many finish college before, even though the majority of them went into law, so I have a lot about that. But the idea is that we can impact on the youth in our communities. This is a group of professionals that we have living in the communities that can do that.

Dr. CRANFORD. I would like to make one observation about working with community health centers. For years we have had family Medicare residency programs in Arkansas in community sites, but we have had only a moderate involvement with community health centers. We have a unique development taking place right now. We are starting a new residency program, and in the adjacent county, a new community health center is starting.

We are planning to integrate those two programs as they develop simultaneously. The AHEC Program is helping in the recruitment of the providers for the Community Health Center, cross-appointing them as faculty in our residency program.

Mr. HUMAN. I feel a real theme of this meeting today has been the relationship of medical schools and federally supported community health centers. I just want to say one quick word about community health centers. I assume most of you know about them, but some of you may not know. These are group medical practices scattered all across America, located mostly in poorer communities, both in inner-cities and rural areas. They are directed by boards of directors who have to have a majority of users and are from the community.

They are private medical practices in that you or I could go and get our medical care from these practices and care for our children, and we would get good quality medical care. However, those of our friends and neighbors who might not be employed, or might be un-

deremployed, and would not have the money to pay a fee that is based on what it costs to provide services, would be able to go to these centers, because the difference in cost would be subsidized by the Federal Government.

So we have some 600 grants to community and migrant health centers across the country, and nearly 6 million Americans get their daily, primary care from community and migrant health centers.

It gets back to what I said this morning, about the problem of health entitlement, unless there is somebody there to actually provide care. It is a way of trying to build capacity in rural areas as well as in the inner-cities where the crack cocaine epidemic and the AIDS epidemic have increasingly made it difficult to attract and retain health personnel of all kinds.

Since there are extensive clinical standards, at community and migrant health centers, childhood immunizations that must be given preventive care that must be offered, they provide ideal settings for training because the comprehensive medical care that most people believe ought to be offered is for the most part offered in the Nation's community and migrant health centers.

Yes, sir?

Mr. SCHONGALLA. Tom Schongalla, speaking for myself again.

I want to address the Canadian example of medical education. I wonder how many of you realize that the Canadian spends \$3,000 a year for his undergraduate medical education, nothing for his pre-collegiate education. In fact, I would like to see what you guys could do in a comparison of the total medical budgets for the 18 Canadian medical schools against comparable U.S. schools.

I would even make an aside and say I would like to see a comparison between the osteopathic and allopathic. I suspect the osteopathic are much less expensive.

But I understand we are not likely to make that trade here. That brings me to my point with Dr. Melnick, I'm not too sympathetic with the statement that a guy only makes \$80,000 or \$100,000, when Ph.D.'s in economics start at \$35,000 or \$40,000, and our training is fairly extensive, too.

In fact, if I were smarter, I might have been a physician. What I mean is, I don't have much sympathy for a guy that says "I have a lifetime of \$150,000 and I can't pay it off." I did my little calculation there. At \$100,000, that's \$13,000 a year, and at \$150,000, it's \$19,000 a year. I suspect you could fill every slot.

Later on I would like to make some points, but let me make one point that if you have not looked at—

Mr. HUMAN. Let me digress here just for one second. I'm not sure that was the best way to put it, the way Dr. Melnick did it. But I do know there is data from the Association of American Medical Colleges that indicates a very high percentage of medical students who graduate are in debt. The average indebtedness is now approaching \$100,000.

Even more disquieting though, is the point I think he was trying to make, and that is that the extent of your indebtedness appears to be very closely correlated to the kind of specialty choice you make. If you are a lot in debt, you are not going to become a family

physician, because it is going to be much more difficult, even if it's possible, to pay off that debt.

Mr. SCHONGALLA. I would like to go along with the points. I just finished dealing with a dean in New York State who tells me that New York State spent 50 percent of its education budget for the 5 percent of the people in health. That's the kind of thing that needs to be looked at. And you all are more aware of it than I am, but Medicare direct medical education and Medicare indirect are over \$10 billion. They could be reallocated to focus more in the rural areas.

But what you hear in this group, if you listen closely, is that nobody wants to attack those approaches, because if we attack any of each other, the person that does the attacking gets sunk, and we continue in the status quo.

Cornell is my alma mater. But Cornell is putting a billion and one into New York City for a new medical center that may not be justified. The interest on a billion and one could do a lot in a rural area. But I notice an absence of interest in expressing and examining those questions in that style. I would love to have Dr. Cranford address that.

Dr. CRANFORD. We don't have a billion dollars in Arkansas. We are just a poor State.

I don't know what to say to that. But I would certainly say that in our State, while we are spending dollars for the main campus in Little Rock, we have a chancellor who is also willing to spend money out in the rural AHECS. I think that's what you need. You need leadership that is willing to do both. We try to develop research, but at the same time we are not forgetting the rural health network, and we are putting more money into it this year.

That's the kind of priority we have at our school, and it's that kind of priority that has made the rural program flourish. Unless you have it, it's not going to.

Mr. HUMAN. Bob.

STATEMENT OF ROBERT BOWMAN, EAST TENNESSEE STATE

Dr. BOWMAN. Robert Bowman, East Tennessee State, Johnson City. Both at the AHEC Conference as well as other conferences, there has been some concern expressed that through AHECs or other methods or even through other family practice residences, we kind of espouse a mini-medical center model that we basically thrust upon whatever areas, whether they are rural areas in Arkansas or Tennessee, instead of really trying to make more representative rural areas.

For the Residency Review Committee's example, Spokane requires four committed family practitioners involved in teaching, four to six specialists, a hospital that has full service ER, OB. By the time you take that, you have a population of 30,000 or 35,000, and you have a fairly good-sized medical center. That's exactly our dilemma in setting up the Kellogg community based programs.

Do we go by that community based model, very much thrusting ourselves on the communities, and setting up a mini-medical center in a rural area of Johnson County with 12,000 people, or do we diffuse things out, more like a Minnesota RPAT model, putting people

in community based sites for 9 months and allowing them to work one on one with practitioners?

If you look through the LCME, they say that students need to work with students. So RPAT and others are in violation of the LCME guidelines. If you look at the residency level, the rural training tracks, again you have one-on-one, you have location, size of hospital, accrediting bodies and other folks to deal with. There are significant impediments to developing both in terms of funding, as well as LCMS and ACGME and residency review committees.

I think the long-term picture is how to get people into rural areas. What model do we show them? That goes back to Flexnor, who is very much process and curriculum and the teachers involved. That ended up in major urban tertiary medical centers versus the other guy—I have forgotten his name—who was outcome-based. The outcome in Spokane and other rural training tracks and RPAT is that those are very good means, both on a student and resident level, of preparing people for medical practice, especially in rural areas.

Yet we still have those impediments. My question to the panel is, how do we help remove those impediments? Things are not okay out there. I need to know this, because I am teaching a rural mini-fellowship program, and part of that program is to help rural, family practice faculty develop their sites and their curriculum. I am going to have to talk with Loren and other folks on a regular basis to kind of find out what those requirements are and how they can either modify them or work with them.

Mr. HUMAN. Well, I think it might be time now to ask our panelists if they have any closing thoughts. Charlie?

Dr. CRANFORD. I would like to make a couple of points. One is that in developing an outreach program in Arkansas, we had to go through at least two phases. First, it was necessary for us to develop a regional hospital network in order to go out one ring in the tree, if you will allow that analogy.

Beyond that, then, the second step was to go into the small communities and into the private practitioner's offices and show students a happy, satisfied practitioner in a small town, and give students a role model to emulate. It's not enough to just take a university hospital based training program and put it in a smaller regional hospital.

You will get a better dispersion of graduates by doing that, but you have not really accomplished a rural outreach program without going to phase two. We have not yet done phase two as well as we want to, and that's our priority right now.

Mr. HUMAN. Bruce.

Dr. BATES. One of the things that strikes me is that this group has a great desire to accomplish the goals we have been talking about all day. We have seen a lot of talent and a lot of ideas on how to do it. We keep bumping up against some of the same walls, the LCME, as the last questioner was talking about, with the ACGME.

The problem has to be that we need to look at a different accrediting and granting structure so that those of us who want to be different and can be different are allowed to be different, and allowed to meet that national agenda.

I have heard that students don't want to go into the rural areas. I have heard that rural practitioners don't want students out there, because they are going to take time, or hospitals don't want them there.

None of that is true. All the students want to be there. The practitioners are energized by having them there. The communities are energized by having them there. The student aspirations and educational systems are influenced. We just—we just—and that's the easy word, need to accept a different paradigm.

Dr. HULLETT. I would like to reemphasize that the medical training can occur in communities and community based programs, especially like our community health centers, that are set up to do this type of training. Sometimes it takes the communities to go to the universities to get something done, and we have shown that we could do that.

The universities have to be somewhat flexible, and they have to be willing to look at other sites. I think the environment now is right for universities to look elsewhere for ambulatory care training, because that will be the mode of the future. It is now time to sit down and discuss and work up those linkages, before being forced to do it, to develop those good relationships with one another. And it can occur.

In our small program now what has happened is that we linked with the University of Alabama, Tuscaloosa, Birmingham, Huntsville, and Samford. We have gotten calls from other institutions in the State, a little bit annoyed that they were not asked to be a part of the whole program, other pharmacy schools and other medical schools.

So once you show you are interested, sometimes other people will come to you.

Mr. HUMAN. Loren.

Dr. AMUNDSON. I have a couple or three comments. The Residency Review Committee is now in its review process, there is a meeting to be held in September. In this last week, I have reviewed two applications for alternative training tracks, where family practice centers will be one in a community of less than 1,000 people, and one in a community of just over 1,000 people. So keep your ideas coming, and many of those are being accredited.

I would just like to make a couple of other comments. One is that in further evidence of South Dakota's commitment to rural health and the underserved, in addition to Senator Pressler's efforts, Senator Daschle and Congressman Tim Johnson have been very active.

You have heard about Governor Mickelson. I am happy to say that Dr. Rod Perry, the Executive Dean of our Medical School, is here today, and Dr. Marge Hegge, from the College of Nursing at South Dakota State University, who is project director of a federal-funded interdisciplinary rural health enhancement project grant.

Rapid City now has an application in for a Title 330 community health center, and at the same time we are diligently working on and hoping for an application for a new family practice residency in the same community, and the two would obviously meld closely together. That's the same site that Secretary Sullivan has just

named as one of six sites in the country for an infant immunization initiative, so things can meld together.

You may also remember that that's the land that "Dances With Wolves," and the 50th anniversary of the finishing of Mount Rushmore, so there is still time to come and visit us.

My last comment would be that to show you that you can come to Washington and get answers, our friend Jeff Human, he told me today our State Office of Rural Health Grant had been funded. So I came to Washington and found something out. I do have to go home and find out for how much, though, right, Jeff?

Mr. HUMAN. I myself am looking forward to going to Rapid City the next time. I understand Kevin Costner's face is going to be added to the mountain, and I'm sure we all look forward to that happening.

I want to thank all of you for sticking it out today, and for making this contribution to public policy. Again we thank Jenny McCarthy for making this possible on behalf of the Committee.

It is impossible to summarize what has happened today in a few words, because a great many things have been discussed in depth that bear further examination, and I think we are all going to look forward to the final report of the workshop. But I do think there was at least one major theme that I kept hearing over and over again, and it had to do with accountability. We make an enormous public investment in medical education, not only from the Federal Government, but from the States, and we should be able to measure a benefit to the common good that comes out of that investment.

Part of the common good we are looking for from our perspective is that we know we need more rural primary care providers, and we think we should expect results from these programs, given the nature of our public investment. My hope is that over time we will be able to see that this was one of the steps we took in a direction that brought us closer to achieving that objective.

Thank you.

[Whereupon, at 3 p.m., the workshop was adjourned.]

APPENDIX

Item 1

The University of Minnesota, Duluth School of Medicine and Family Practice Preceptorship Program

"Minnesota is fortunate to have a medical school whose primary mission is the training of future family physicians who will serve in rural communities".

**"Providing Medical Care In Rural Minnesota
Recommendations For Meeting Health Personnel Needs"
Minnesota Department of Health
Health Systems Development Division
March, 1991**

(93)

The University of Minnesota, Duluth, School of Medicine

The University of Minnesota, Duluth, School of Medicine was established by the State of Minnesota in 1969 in an attempt to alleviate geographic and specialty maldistribution of physicians in the State of Minnesota and in the immediate Upper Midwest region. It is the only separately accredited school in the nation offering the first two years of medical education. Upon successful completion of two years in Duluth, students are accepted on a noncompetitive basis into the Medical School of the University of Minnesota, Minneapolis for completion of their medical studies.

The School has been remarkably successful in the attainment of its original goals. Of those students completing their studies for the M.D. and matching into residencies (entering classes of 1972-1987), fifty-two percent (52%) have selected residency training programs in Family Practice. No other medical school in the nation has achieved this level of success in meeting these specific educational goals. A recent article in *Family Medicine* (Schmitling, et. al., 1990, vol. 22, No. 2, pp. 130-136) shows the national average proportion of graduating students selecting Family Practice as approximately 12% ($\pm 1\%$) for the last decade. This survey, and others, indicates that the UMD average proportion of graduates selecting Family Practice (52%) continues to be highest in the nation. While no comparative data is available on selection of practice sites, the proportion of UMD graduates selecting communities smaller than 50,000 is 60%; the national average, according to the American Medical Association, is 12%. More than 41% of the UMD School of medicine graduates practice in communities with populations smaller than 20,000.

Recent studies on rural and other health personnel shortages, such as that cited above by the State of Minnesota and of the Council on Graduate Medical Education (COGME) of the United States Congress, as well as the major manpower studies of the past (e.g. the GMENAC and Rand Corporation studies), clearly document the continuing need for physicians in Family Practice and in smaller communities; the "doctor glut" has been and continues to be, an urban phenomenon in Minnesota and in the nation at large.

The Council on Graduate Medical Education stated in its first report to the Congress in July, 1988:

THERE IS A GEOGRAPHIC MALDISTRIBUTION OF PHYSICIANS, WITH TOO FEW PHYSICIANS IN MANY RURAL AND INNER-CITY AREAS.

Recommendation. Existing activities that increase the likelihood that physicians will locate and remain in shortage areas should continue and be strengthened, such as:

- recruitment and selection of allopathic and osteopathic medical students who are likely to locate in shortage areas;
- medical school programs including preceptorships in shortage areas;
- Student financial support ..."

and, with regards to specialty choice and family practice,

THERE IS EVIDENCE OF AN UNDERSUPPLY OF CERTAIN PRIMARY CARE PHYSICIANS TOGETHER WITH AN OVERSUPPLY OF SOME NONPRIMARY CARE SPECIALISTS.

THERE IS AN UNDERSUPPLY OF PHYSICIANS IN FAMILY PRACTICE.

Recommendation. Allopathic and Osteopathic medical school graduates should be encouraged to enter training in primary care, particularly in family practice and general internal medicine. The general areas of geriatrics and preventive medicine should also be emphasized."

(First Report of the Council, Volume 1, Council on Graduate Medical Education, June, 1988, US Department of Health and Human Services, PHS, pp. xxii-xxiii)

Later in the COGME Report, the connection that is well known to those who have studied health manpower issues is stated very clearly:

"Family physicians continue to locate in rural and other shortage areas in notably larger proportions than do other medical specialists. Their multidisciplinary training permits them to care for most problems presented in their offices and to adapt to the diverse needs presented in various geographic areas. The demand for family physicians is significant and increasing... Concurrent with this increasing demand for family physicians is a supply unable to keep pace... With one out of three family physicians/general practitioners aged 55 years or older, attrition from practice for this discipline is expected to be high in the next 10 to 15 years (p. 18-19)"

(First Report of the Council, Volume I, Council on Graduate Medical Education, June, 1988, US Department of Health and Human Services, PHS, pp. 18-19)

R. L. Ernst and D.E. Yett, in *Physician Location and Specialty Choice* (Health Administration Press, Ann Arbor, Michigan, 1985) - a fairly recent and comprehensive volume reviewing the literature on the topics of specialty choice and practice location, state the following:

"The relationships between the physician's place of upbringing - whether a rural or an urban community - and both specialty and practice location selection have been investigated at length. Many descriptive studies have shown that general and family practitioners are considerably more likely than other physicians to have been brought up in rural areas (11 citations)... While general and family practitioners may differ with respect to other background and personality traits, both appear to be drawn heavily from rural areas ... population size of the physician's home county was by far the most significant predictor of practice county population, regardless of specialty selection." (pp.72-73)

"Virtually all small-sample studies of earlier generations of rural physicians singled out rural upbringing as a trait distinguishing them from urban practitioners (11 citations). Data on recent medical students by Carline et. al. (1980) indicate that the pattern continues to hold. By contrast, there is no evidence that rural practitioners are drawn to any appreciable extent from urban-reared physician populations ... It has long been known that general and family practitioners are more likely than other physicians to enter rural practice ... The associations between rural upbringing, entry into general or family practice, and the choice of a rural practice location suggest some form of causal relationship." (pp. 73-74)

"... family practitioners exhibit traits similar to those of all physicians. The only distinctive trait they share with general practitioners is the tendency to be raised in rural areas." (p. 78)

It is clear that the need for rural practitioners and for family physicians continues to be very apparent and important on both the State and Federal levels. The University of Minnesota, Duluth, School of Medicine continues to meet these critical needs.

The nineteenth class of medical students began their studies in Duluth in the Fall of 1990. There are 48 students in each entering class. Since the first students began in 1972, emphasis within the curriculum has been on excellence in training in the basic and behavioral sciences as essential precursors for Family Practice; particular stress has been placed on the need for recruitment of students more likely to practice as physicians in rural and smaller communities. Since the school's inception, faculty and administrative staff have been appointed who are strongly supportive of these institutional goals; admissions procedures and preferences are structured with the commitment to Family Practice and the practice of medicine in smaller and rural communities in mind.

The educational program offered to the medical students is of high quality and is well taught; evaluation of the curriculum is continuous. Student performance on Part I of the National Board examinations has, over the past decade, been superior. A large portion of the training within the two years of medical school in Duluth is clinical in nature. Clinical coursework during the first two years emphasizes the building of fundamental patient care and communications skills and the development of an appropriate patient information base; during the latter portion of the second year, the student begins to synthesize the corpus of material presented and formulate differential diagnoses tied to appropriate treatment plans. Within the Department of Clinical Sciences, the Family Practice Preceptorship program provides an educational link to practitioners of Family Medicine for students throughout the first two years of medical school at UMD. Each student works "one on one" with a practicing family physician. The impact of this unique educational partnership on the students' choices of specialty and practice location is believed to be great.

When Dr. William Jacott was appointed as the first director of the Family Practice residency in 1975, direction of the preceptorship program was assumed by Dr. James G. Boulger (Associate Dean of the School from 1974 through 1990). Thomas Day, M.D. has worked with Dr. Boulger since 1984 in the assignment of first-year students throughout the Duluth-Superior-Cloquet area. Since the Family Practice Preceptorship began in 1972, 134 family physicians have participated as preceptors in the first-year program; 157 have been second year preceptors.

The Family Practice Preceptorship is required of all students in both years of the curriculum. During their first year of medical school, each student is assigned to a practicing family physician in the Duluth/Superior/Cloquet/Two Harbors area; each student meets with his/her preceptor ten times over the course of the academic year. No other activities are scheduled during these times. Sessions are varied across days of the week and mornings/afternoons in order to expose the student to the variety of activities of the preceptor (e.g. hospital rounds, clinic practice, nursing home rounds, etc.). These sessions begin during the eighth week of medical school and continue through the year at approximately three week intervals.

During the second year, each student is assigned to a family physician preceptor in a smaller community. The student meets with the preceptor for a period of three consecutive days (and nights) midway through each academic quarter. These communities are located within the geographic area bounded by International Falls, Minnesota (North), Fairmont, Minnesota (South), Fargo, North Dakota (West), and Ashland, Wisconsin (East) -- an area encompassing more than 90,000 square miles. This dispersion is desirable given the availability of high-quality preceptors within the less densely populated areas of the State. Many of these sites are in or contiguous to traditionally underserved areas. During these three-day visits, the students live with the preceptor and his/her family in order to maximize student exposure to the everyday working environment of the small community family physician and the life-style of that physician in the non-urban setting.

Three times per year, the director of the program meets with the students of each class to review and evaluate the preceptorship experiences; this also enables the students to "compare notes" on the different types of practice organizations and styles they have seen. The director has held faculty enrichment workshops in eleven different locations throughout the region delineated above during the past five years. Workshop objectives included assistance in development of productive teaching styles for the practicing physician, methods of educational goal setting, and evaluation of student performance in an office setting. There has been candid and productive discussion of problems involved with scheduling, housing, patient acceptance of the student, etc.

Student experiences on the Family Practice Preceptorship have been, almost without exception, overwhelmingly positive; many have commented spontaneously that this experience is one of the most helpful and gratifying in their medical school career. In this year's survey of the student's perceptions of the benefits and/or disadvantages of the Family Practice Preceptorship, only two "negative" comments were received from the ninety-seven students responding; ninety-eight percent (97.8%) of the comments were favorable. Preceptors also report that the experience is very enjoyable, and that the role of mentor during the student's formative years is quite gratifying. Very few of the preceptors have chosen to "resign" from the program; many have nominated their partners for positions as preceptors. In fact, there is now an excess of preceptors for the forty-eight second-year students; seventy-six area family physicians are now participants. This enables the school to be more selective in matching student desires with specific sites for training; additionally, some preceptors can now "take a year off" if they wish.

All preceptors are unpaid; all teaching efforts, lodging and meals for students, etc. are donated by the physicians and their families. Physicians in both the first- and second-year Family Practice Preceptorship are offered clinical faculty appointments on the faculty of the School of Medicine at Duluth. The family physicians have been and continue to be extraordinarily generous with their time and talent; their colleagues, hospital staff, clinic personnel, and their families also have given unstinting support to the Family Practice Preceptorship. It would be impossible for the School of Medicine to pay even a fraction of the actual cost of this program; only the generosity of the family physicians makes this excellent student educational experience possible. The program director site visits each of the remote training sites (once or more often per year) in order to evaluate the appropriateness of the site and patient population for training.

On May 18, 1990, the Family Practice Preceptorship Program was presented the **National Outstanding Rural Health Program Award** by the National Rural Health Association. This award recognizes "a statewide or regional program which promotes or facilitates the development of rural health care systems. Factors taken into consideration include coordination, networking, innovation and lasting impact".

Exposure to the actual practice of family medicine in the first and second years of medical school provides the medical student with appropriate role models at a particularly critical period in career preference development. The successful recruitment of excellent students into Family Practice will ensure the continued growth of the specialty as an academic discipline and desirable practice mode.

There are seven Basic Science departments within the school (Anatomy, Behavioral Sciences, Biochemistry, Microbiology, Pathology, Physiology and Pharmacology). The current complement of full-time faculty is 41. Traditional basic medical science coursework is offered and augmented by substantial instruction in the behavioral sciences.

There is one clinical department (the Department of Clinical Sciences) which is organized into six co-equal sections: Family Practice, Medicine, Surgery, Pediatrics, Obstetrics/ Gynecology and Psychiatry. Section heads are appointed by the department head following consultation with the Dean, community physicians in the various medical specialties, county medical society officers, and appropriate professional groups (e.g. the Lake Superior Chapter of the Minnesota Academy of Family Physicians).

With one exception (Family Practice), all section heads are appointed from the practicing clinical community. The head of the Family Practice Section holds a full-time academic appointment in the UMD School of Medicine, held jointly with the Department of Family Practice and Community Health in the Medical School in Minneapolis. This dual arrangement for Family Practice is congruent with the institutional goals and actually provides the Section of Family Practice with more informal authority and decision-making influence than other Clinical Sections.

Clinical faculty appointments are offered to community physicians of high calibre. Faculty holding clinical appointments in the Family Practice section of the Department of Clinical Sciences are eligible for and serve on the various faculty committees of the School governing budget, curriculum, admissions, promotion and tenure, etc. The Family Practice section of the Department of Clinical Sciences is, appropriately, the most active and visible within the department. Approximately one-hundred and thirty-four (134) area family physicians hold active clinical teaching appointments at the school; more than 150 other physicians representing the various other medical specialties hold clinical teaching appointments as well.

Sound educational policy dictates a continual analysis of the pre-clerkship curriculum in order to maintain an appropriate and contemporary emphasis on Family Practice as part of an integrated institutional strategy for the School. Reinforcement of student interest in Family Practice as a viable and desirable career choice must continue in a realistic, coordinated and deliberate fashion.

The attached charts and illustrations show the distribution of specialty choices for the first 639 graduates of the UMD School of Medicine, a comparison of the proportion of UMD students choosing family practice and primary care with the national average, the practice locations (by community size) of the first 428 graduates in practice and a map of the Family Practice Preceptorship sites used during the first nineteen years of the program.

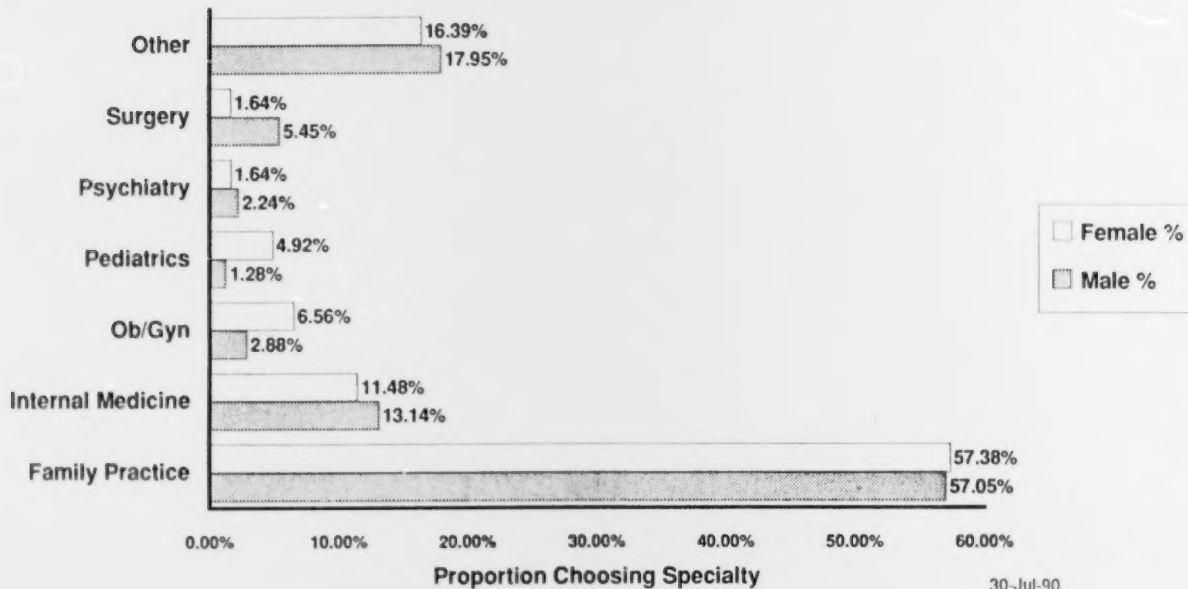
Questions concerning the School of Medicine and the Preceptorship program should be directed to:

Ronald D. Franks, M.D.
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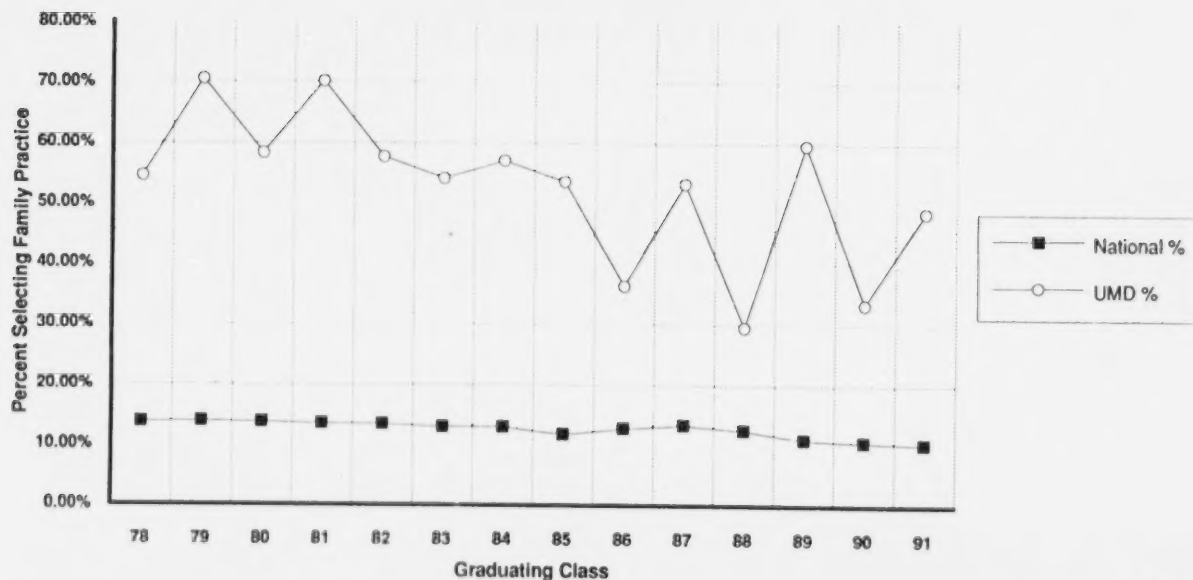
James G. Boulger, Ph.D.
Director
Family Practice Preceptorship Program
UMD School of Medicine
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or

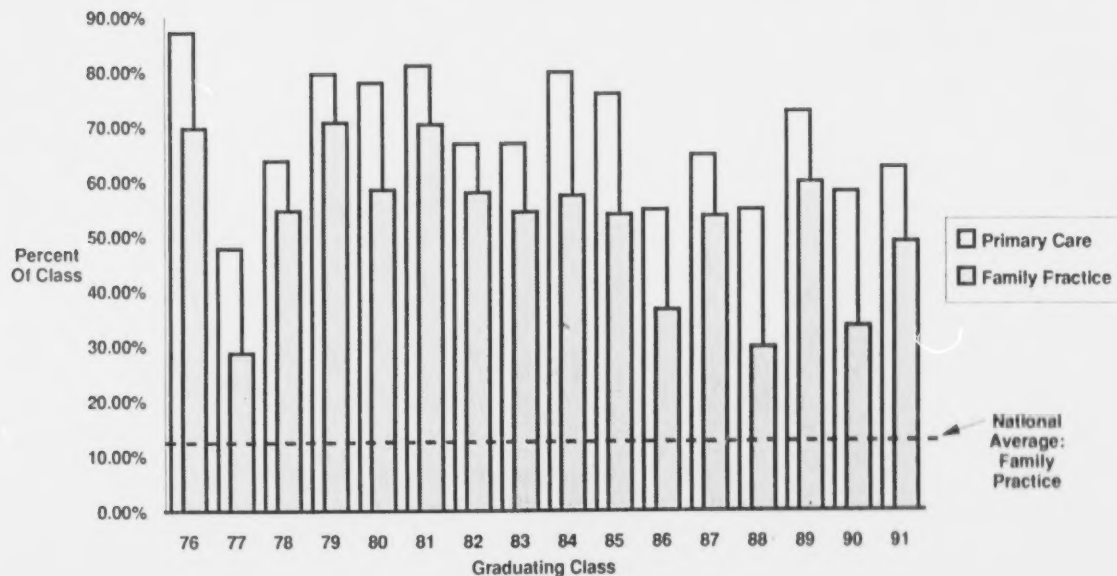
**Specialty Choices Of University Of Minnesota, Duluth, School Of Medicine
Graduates In Practice (N = 422)**



**Percent Of Graduates Selecting Family Practice:
University of Minnesota, Duluth, School of Medicine
vs. National Average**



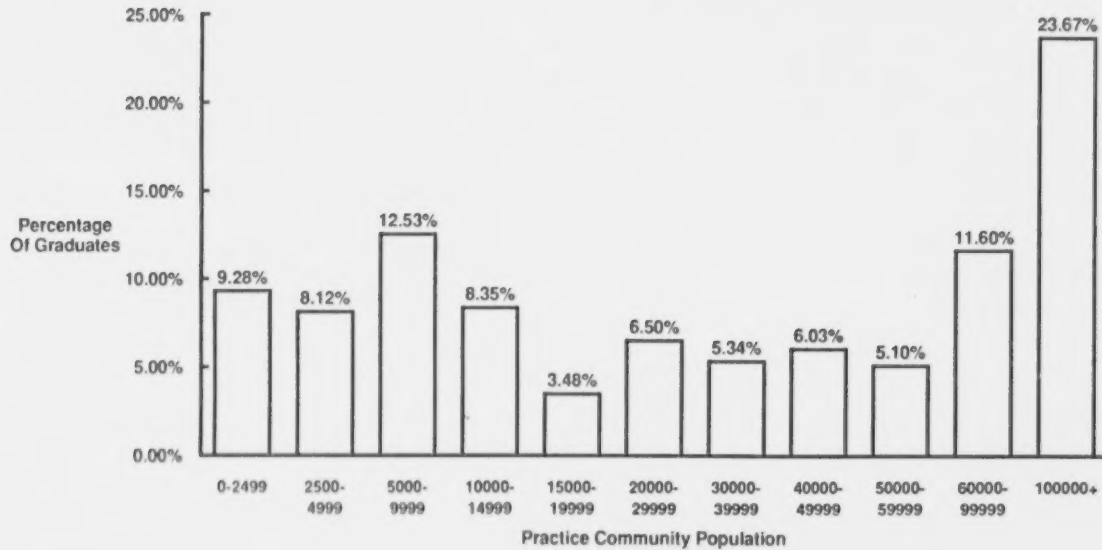
Percent Of University of Minnesota, Duluth, School Of Medicine Graduates
Choosing Family Practice And Primary Care
(Family Practice, Internal Medicine Or Pediatrics)
Graduating Classes of 1976 Through 1991 (N = 639)



100

110

**Percent University Of Minnesota, Duluth, School of Medicine Graduates
Practicing In Various Size Communities (N = 431)**





University of Minnesota, Duluth,
 School of Medicine
 Family Practice Preceptorship Sites
 1972-1991

PART I

Premedical and Undergraduate Medical Education

THOMAS A. BRUCE, M.D.

Physicians for the American Homelands

Abstract—Academic health centers in the United States are in danger of becoming more and more irrelevant to the non-tertiary, primary health care needs of modern society. This paper explores options to respond to one segment that repeatedly has been demonstrated to be in distress: rural health care. Recommendations are made about selective recruitment into medical

and other health schools to address the issue, early professional socialization, curricular reform, and the types of technical assistance that academic centers might well provide to rural practitioners and caregiver institutions. *Acad. Med.* 65, Supplement 3(1990):S10-S14.

In South Africa, the Nationalist Party formalized a program in 1948 to segregate the races and guarantee the state supremacy of the white man. That concept, called apartheid or "apartness," has been an element of South African government policy since that time. Because of that policy, whites are treated as a majority, although more than 80% of the people in that country are not white. The system works something like this: under apartheid, most nonwhites are not considered citizens of South Africa, but of the homelands—a series of rural enclaves where the native black Africans can have their own tribal governments, schools, businesses, health care, and the like. The white citizens of South Africa run their cities in a civilized, modern way, using the vast natural and mineral resources of South Africa to sustain a decent way of life for those who are considered full citizens.

In the United States, we seem to be evolving our own variant form of "apartness" in our innermost cities and in much of rural America—not a system set up by government policy and not necessarily based on race but a system of social inequality where

some citizens get less than a full share of the American way of life. It is wrong to call this progressive American drift into an underclass system "apartheid," but there are some unfortunate similarities. The thing to be most feared is that U.S. medical schools will drift to that same South African model, where teaching hospitals provide charity services to the needy but graduates elect overwhelmingly to develop careers serving the first-class citizens of the country. The American steady shift towards tertiary care medicine (Figure 1), and away from primary care careers, can only be interpreted as a sign of this drift toward "apartness."

There is little need to document in detail that rural health care is not faring well in our country. Tables 1 and 2 show something of the detrimental changes seen in rural hospital admissions and obstetrical deliveries. According to the National Rural Health Association, in 1988 a total of 13 million people were medically underserved in 1,300 designated shortage areas. To meet this need, 4,100 physicians are required. What are the implications of these problems for academic institutions? If, in fact, we are social institutions, and if our success is measured in terms of whether we produce the numbers and kinds of health care professionals that this nation needs, then our path for corrective action should be self-evident. Unfortunately, it is not all that

simple. Deciding on the numbers and kinds of graduates needed is complex. Even if we are talking only about physicians—and that is a big leap—there is not consensus on how this can be achieved. Some schools define their mission as producing medical scientists, physicians who are committed to being tomorrow's investigative and scholarly leaders. Others see their destiny more simply as educating good doctors—excellent diagnosticians, surgeons, psychiatrists—physicians who take themselves and their profession seriously and who strive to master the subtleties of professional practice. One could not argue against any of these options, but the question is whether an additional social factor needs to be added. If somehow we become deluded into delivering most of our excellence to the privileged members of society; if our scientific and technical skills are less available to those who are poor, or unwashed, or who reside outside our metropolitan areas—then we are drifting towards an American version of apartheid!

Paternalism is no doubt the root cause of apartheid, as it is of slavery and other manipulative systems whereby one group controls the lives and destinies of other human beings. Since both academic health centers and their parent universities have been accused of paternalistic approaches to solving health and social problems, it is important that we pro-

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ceed cautiously with solutions, that we not simply substitute one bad approach for another. Community-oriented and community-responsive educational programs would seem to be the surest way to avoid the traps of narcissism and distorted perceptions. Looking at the priority health needs of whole communities would perhaps negate the premature conclusions of a database that uses only individual patients seen in medical clinics and hospital beds.

Many would argue that it is the business of government, not academic health centers, to correct these inequalities in our health delivery system. Government can, of course, reset payment and other incentive systems to ensure a more equitable distribution of physicians and health care resources. Unfortunately, government is us—the collective voices of all the people and their elected representatives—and there has not been a loud call for change in medical reimbursement for those who serve in the most needy communities. It would seem better, in the absence of a clarion call for change, to address this problem from a variety of sources. The role of academic health centers in a public/private/academic consortium (one that is dedicated to promote system changes in the delivery of health services, education of health personnel, and financing of services and education) would be to ensure that their graduates had the right knowledge, skills, and attitudes to practice in areas of societal need.

The basic question of this symposium thus narrows down to a philosophic issue: is the primary role of medical schools to meet the expectations and aspirations of their individual students, or to meet the needs of the society that the profession serves? If that can be answered, other tough questions follow: To what extent are academic leaders justified in shifting the emphasis towards primary medical careers and away from the less-needed subspecialties? How can this be achieved without being excessively prescriptive for the lives of the students who are enrolled in professional education?

It is my conviction that there is an

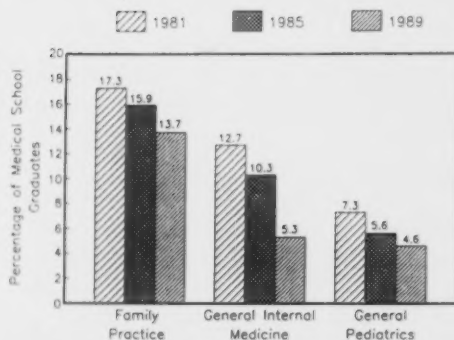


Figure 1. A declining interest in three primary care specialties is evident from responses of medical school graduates on 1981, 1985, and 1989 AAMC Graduation Questionnaires.

overwhelming need for rural caregivers across this country. If this is true, how might any one medical school go about addressing the problem? Let me outline some potential approaches that might be effective. I shall classify these under four categories: (1) recruitment, (2) socialization of learning medicine, (3) curricular

reform, and (4) technical assistance to community practice sites.

Recruitment

My own former research in Arkansas¹ and that of other investigators has shown that individuals tend to practice in areas that are similar to those

Table 1
Changes in Urban and Rural Hospital Admissions, 1979 and 1985*

Location	1979	1985	% Change
Rural	8,768,109	6,826,261	-22.1
Urban	26,331,122	26,622,370	+1.1

*Source: National Rural Health Association.

Table 2
Changes in Urban and Rural Births, 1979 and 1985*

Location	1979	1985	% Change
Rural	779,648	666,071	-16.7
Urban	2,487,364	2,850,064	+14.8

*Source: National Rural Health Association.

Table 3
Personal and Professional Factors Important to Arkansas Medical Students in Practice Location Choice*

Factor	First Place†	Second Place†	Third Place†	Total Points
Preference for rural/urban living (personal)	261	78	21	360
Climate/geographic area (personal)	123	120	61	304
Influence of spouse (personal)	123	78	23	224
Group practice option (professional)	114	52	30	196
High medical need (professional)	105	54	27	186
Clinical support (professional)	78	58	21	157
Cultural and social life (personal)	54	52	31	137
Schools for children (personal)	24	70	26	120

*Source: Bruce, T. A., and Norton, W. R. *Improving Rural Health: Initiatives of an Academic Medical Center*. Little Rock, Arkansas: Rose Publishing Co., 1984, p. 48.

†Rating code: first place—3 points; second place—2 points; third place—1 point.

they knew while growing up. (Table 3, Figures 2 and 3). Some of the options to improve recruitment of individuals with rural backgrounds follow:

1. Develop special affiliations with colleges—including community colleges—that tend to have large numbers of rural students.
2. Work with rural alumni in setting up junior and middle-school health career clubs.
3. Organize a special admissions track (rural "affirmative action").
4. Give special attention to recruiting rural minority and other rural disadvantaged student candidates.
5. Work toward a larger number of

primary care/rural practice scholarships and loans.

Socialization

It seems likely that the early identity of students as future primary caregivers and potential rural practitioners is crucial to the success of the program. It will not be easy to sustain this goal through seven total years of graduate and postgraduate training, the majority of it located in a metropolitan setting. As you know so well, strong pull/push factors tend to favor subspecialization and practice in urban settings. The PULL can be depicted by the old query, "How're you going to keep them down on the farm

after they've seen Parree?" The PUSH in some instances is equally powerful, "How're you going to keep them down on the farm after they've seen the farm?"

There is a clear-cut attrition of interest in rural practice as medical education progresses (Figures 4 and 5). It will take an aggressive program by the medical school leadership to avoid this trend. The key to success almost surely is in getting good role models with the students early in the educational program and maintaining that relationship over time. Options include the following:

1. Sensitize faculty and staff to rural values and needs.
2. Appoint the best primary care teachers (without rural bias) to lead freshman courses in introductory medicine.
3. Orient the students themselves (?premed) to the school's rural interests/goals.
4. Develop early rural preceptorship experiences.
5. Set up a primary care "adoption" or "buddy" support system.
6. Provide environmental reminders such as rural recruitment fairs, rural practice exhibits, invited rural speakers, weekend rural bus trips.
7. Organize student primary care societies; American Medical Student Association.
8. Assist students (interdisciplinary) to volunteer time to provide rural or other needed health services.
9. Include the spouse or "signifi-



Figure 2. The mobility of Arkansas physicians in small communities during the first two years of practice, 1962-1974. These communities were of between 1,000 and 5,999 population.

ent other" in planned rural institutional activities.

Curricular Reform

Many would claim that changing the educational programs of the medical school is the least effective approach to reform. While that may be true, in my view the potential for marginal impact should not be ignored. At the least, the willingness of faculty to change to a more supportive curriculum is a signal of their recognition that rural medical careers are valid. Some of the more attractive options might be the following:

1. Use liberally rural problems and clinical "taster" experiences during the early medical school period.
2. Modify the physical diagnosis class to include health "risk" as a part of every clinical assessment.
3. Develop a primary care clinical track.
4. Emphasize an ambulatory setting, or learning, preferably in community sites.
5. Provide training in community- or population-relevant problems with some meaningful field experiences early in the medical school years.
6. Provide options or develop requirements for rural research.
7. Organize a bevy of rural elective program options.
8. Expand the number of primary care residency programs that have a visible and recognized connection to rural health care.
9. Develop joint programs in primary care with such schools as nursing, public health, dentistry, and pharmacy for histories and physicals; community assessment/development; family ecosystems; cultural and ethnic diversity; written and oral communication; information and computer sciences; health promotion/disease prevention; pathophysiology; clinical pharmacology; health ethics and the humanities; the social and behavioral sciences in health care; gerontology and long-term care; human growth and reproduction; childhood and adolescence; community mental health; alcoholism and drug abuse; human nutrition.

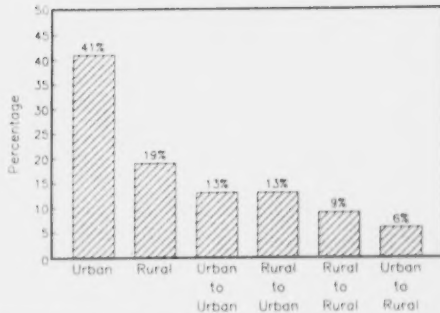


Figure 3. Percentage distribution of all Arkansas medical graduates, 1962-1974, according to movement patterns.

Technical Assistance to Communities

Small towns and rural communities are quite fragile as practice sites; they have a range of other problems such as economic instability, poor schools, bad roads, and leadership gaps. Small

towns often interpret their health needs as "recruiting a doctor." They may be quite unsophisticated with regard to the importance of clinic and hospital facilities, nursing homes, the role of the local health department, and the presence or absence of other team members, such as nurses and

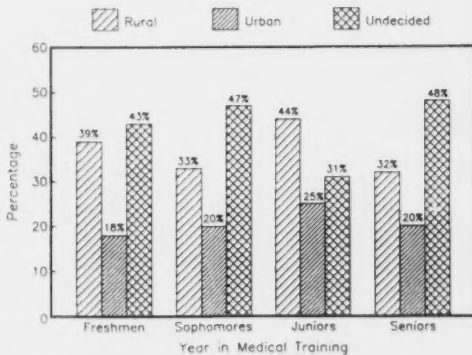


Figure 4. Assessment of Arkansas medical student preferred practice sites, urban, rural, or undecided, by year of student class, 1984.

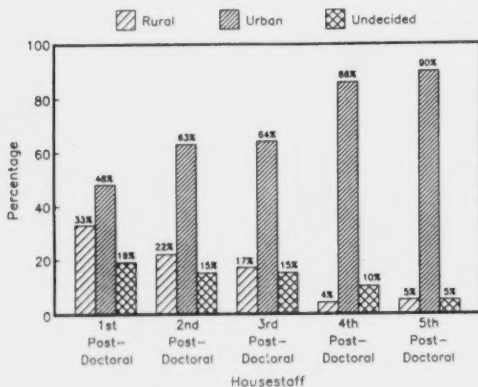


Figure 5. Assessment of Arkansas housestaff preferred practice sites, urban, rural, or undecided, by year of training, 1984.

pharmacists. They rarely appreciate the value of a group practice as opposed to solo practice. They have little recognition of the problems of professional isolation and brown-out from overwork. They often have very primitive ideas about how to recruit new physicians and nurses. Medical

schools often have the only source groups that can respond to some of these issues; they should consider some of the following options:

1. Provide consultation on making clinic/hospital facilities more relevant and strengthen local leadership

(hospital board, and so on).

2. Counsel on recruitment and retention problems.

3. Create opportunities for student and resident physicians to work as consultants in community assessment and development.

4. Help develop alternative health care systems for serious problem areas.

5. Develop better and more relevant continuing professional education, communications, and other information management systems.

6. Mobilize support from other public and private agencies to assist with local rural problems.

Other Options

Not addressed here, but of no small importance is the capacity of academic health centers to work with and advise their legislators and other national health leaders about the needs in rural health care and the system or policy changes that would facilitate change in a positive direction.

Reference

1. Bruce, Thomas Allen, and Norton, W. Richard. *Improving Rural Health: Initiatives of an Academic Medical Center*. Little Rock, Arkansas: Rose Publishing, 1984.

Appendix I

ARNOLD MELNICK, D.O., M.Sc., F.A.C.O.P.

Osteopathic Medicine and Primary Care Practice: Plan or Serendipity?

Abstract General practitioners predominate in osteopathic medicine (57% of all D.O.s), as compared with allopathic medicine. A number of possible reasons are put forth: the student selection process (cloning by admission committee general practitioners), special features of osteopathic education (more required courses, primary care courses, and rotations), training in osteopathic hospitals (mainly community institutions), a re-

quired rotating internship; and predominant departments of general practice in osteopathic hospitals and colleges (providing more high quality general practitioner role models). The author suggests consideration of personality differences, as measured by the Myers Briggs Type Indicator, as a possible causative factor in differences between the allopathic and osteopathic segments of medicine. *Acad. Med.* 65, Supplement 3(1990):S87-S89.

Osteopathic medicine finds itself in a unique position in the world of medical education. Whether by chance or by design, it has become a profession of general practitioners. In osteopathic medicine, board-certified general practitioners and certified general practitioners are directly analogous to family medicine practitioners and general practitioners in allopathic medicine.

A decade ago, 87% of all D.O.s in practice were in general practice; an additional 4% were in the other primary care fields—internal medicine, pediatrics, and obstetrics/gynecology.¹ The remainder of osteopathic physicians were distributed among the other specialties. Currently, by contrast, approximately 57% of all D.O.s are in general practice and approximately 8% are in the other primary care fields, for a total of 65% in primary care.²

At one point, little attention was paid by most people to this peculiarity of the osteopathic medical profes-

sion. As a matter of fact, in some quarters it was considered a blemish that so few osteopathic physicians were in the "real specialties." Today, the osteopathic medical profession, having existed for one hundred years emphasizing the general practice field, provokes questions about how we achieved this status, toward which goal allopathic medicine now appears to be struggling.

This prevalence of general practitioners has created an unusually strong and active American College of General Practitioners in Osteopathic Medicine and Surgery. This organization is the largest and the most powerful organization in the osteopathic profession, exceeding all other specialty groups. It extends its strong influence in all accreditation and political matters, and it is a dominant force in the American Osteopathic Association, beyond any other group. This, too, may play an important role.

While cause and effect cannot be determined in a profession that has unfortunately done little research on itself, and while there may be speculation pro and con about the reasons, it is logical nevertheless that medical education experts interested in producing primary care physicians should at least look at the history of the osteopathic medical profession for any clues that might be utilized.

Differences between Osteopathic and Allopathic Medical Colleges

Allow me to present some facts and statistics and, unavoidably, some personal opinion. I shall try to point out which is which. I shall present several characteristics of osteopathic medical practice and osteopathic medical education that are different from allopathic medical educational institutions and therefore might be significant. I further will have to differentiate between the college I represent (Southeastern College of Osteopathic Medicine) and other osteopathic medical colleges, because I cannot speak in detail for them, even though osteopathic medical education patterns are somewhat similar.

Student Selection Process

In chronological order, one of the first factors that I believe is important is the student selection process. It has been pointed out in the literature, and a great number of people in medical education agree with it, that for the most part admission committees tend to clone themselves. So, because the osteopathic medical profession has been a profession of general practitioners, and because the osteopathic medical profession with its small size has never been able to develop large

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academic centers, the number and influence of specialists in osteopathic medical education and other osteopathic institutions have generally been lower than in allopathic medicine. Thus, general practitioners have tended to predominate in our medical schools and, as a result, they clone themselves by picking, consciously or unconsciously, those medical students who would probably become general practitioners. Further, a great number of candidates are referred to osteopathic medical colleges by this large mass of general practitioners.

Didactic Courses

In the educational process itself, the differences between allopathic and osteopathic medical curricula are believed by many to play an influential role. Osteopathic institutions literally train students to become general practitioners by utilizing educational arrangements abandoned in the allopathic system. As a matter of fact, allopathic general practitioners were produced in great numbers when the profession still used the old system. Osteopathic medical schools still consistently teach didactic courses in all fields of medicine to their undergraduates before they are sent out for clerkships or rotations. All students take required courses in all subjects, so that every osteopathic medical student receives complete classroom exposure to the entire field of medicine. Add the fact that, in most colleges of osteopathic medicine, very few electives are offered. Thus, even for those students who feel that they have defined some other ultimate goal for themselves, osteopathic medical education provides a well rounded general practice background. For those students interested originally in general practice, their feelings can be reinforced.

Clinical Rotations

Clinical rotations (or clerkships) for osteopathic medical students tend to be skewed in the direction of general practice also. Most rotations are required of all students and generally cover a broad spectrum of primary

care subjects. Most osteopathic medical colleges require a minimum of one month of rotation in general practice, and many require more. In many cases, these rotations are taken as preceptorships with a successful general practitioner, serving both in his or her office and on hospital rounds. For those students with any general practice bent, this can well serve as another reinforcer. It also sends a message to the students about the importance of primary care.

Further, it must be noted that, for the most part, clinical rotations are taken in osteopathic hospitals or osteopathic medical clinics, where there is always a large cadre of general practice physicians caring for their patients alone or in conjunction with osteopathic specialists. Thus, even in a specialty rotation, the osteopathic medical student (and intern) is constantly exposed to general practice physicians caring for their own patients.

Southeastern University College of Medicine (SECOM) has two and a half years of didactic education, one semester longer than most allopathic medical institutions and even a few other osteopathic medical schools. This is so because the administration of SECOM believes that there is so much didactic material to be absorbed before clinical exposure in order to create a well-rounded physician.

In their clinical time, SECOM students spend 16 months on clinical rotations or clerkships, of which 13 are in primary care fields. All students must spend at least four months in an ambulatory primary care setting; most take three months in a rural area and one month in an urban setting. In addition, at least two other rotations are 50% ambulatory. Although our students serve some rotations in nearby, highly sophisticated, tertiary care centers, most of them are in community hospitals, which is what most osteopathic institutions are; and community hospitals tend to be more primary care oriented.

Internship Characteristics

Another major factor, we believe, is the osteopathic requirement for a

one year rotating internship on completion of the four years of undergraduate work. This rotating internship, retained by the osteopathic medical profession, usually follows the traditional form and exposes the intern to a general practice type of experience. Two three-month rotations each are devoted to medicine and surgery; one month each to obstetrics/gynecology, pediatrics, and general practice, as well as a one-month elective. A two-month rotation is spent on hospital-specific services such as radiology, pathology, and anesthesiology.

Recently, the osteopathic medical professional has introduced a more progressive internship, optional to the traditional, allowing for more ambulatory care training. In this progressive internship, for example, 50% of pediatrics and 25% of obstetrics/gynecology must be in ambulatory care settings.

Osteopathic General Practitioners as Role Models

In addition, since most of these internships are in osteopathic community hospitals, the intern encounters a number of fine role model general practitioners to emulate. And it is not unusual for some of these general practitioners to influence some of the interns in the direction of primary care. They also often find their future partners among the interns.

Furthermore, the osteopathic internship, placed as it is between the senior year and residency training, affords the osteopathic physician graduate the opportunity to look around while gaining another year of maturity and another year of broad experience before having to make a solid commitment to a field of practice. So osteopathic interns, influenced as much by general practitioners as by specialists, can observe the opportunities available for a rewarding and financially stable practice in general medicine as a viable alternative to specialty practice.

In the osteopathic medical profession, until about 15 years ago, it was usual for many D.O.s to enter practice immediately upon completion of internship. This was possible because

an osteopathic physician's entire exposure during his or her four years of undergraduate work and during internship is a general practice experience. This entry directly from internship into practice accounted for large numbers of osteopathic physicians' being in general practice. Most of these physicians included the hospital care of their patients as part of their practices. By virtue of this, osteopathic interns have the opportunity to see successful and happy general practitioners to emulate.

It is easy to see, understanding the preceding description, that there has been over the years a position of prestige held by general practitioners in the osteopathic profession. This, plus other factors previously mentioned, appears to help attract high-achieving students in as great an amount as do the specialties.

In most osteopathic hospitals the department of general practice is the largest department, adding more strength to the position of the general practitioner. In most osteopathic medical schools, general practitioners occupy a similar predominance, the department of general practice being the largest or nearly the largest in the institution. (In the case of SECOM, general practice is the largest department in the institution.) This further adds to the level of recognition of general practice by students.

By way of summary, then, one can see that the osteopathic medical profession has a majority of general practitioners, provides high-quality role-models for students (in part because of the large numbers), recognizes general practice as an important bloc politically and influentially, puts more emphasis on primary care in predoctoral work, introduces general

practice rotations and rural rotations early in the curriculum, and emphasizes strongly the rotating internship.

Hospital Characteristics

There is an interesting consideration about an absent factor that may influence emphasis on primary care in the osteopathic medical profession. Dr. John Freymann³ has made the statement that one of the reasons osteopathic medicine has produced so many general practitioners is that the profession is not burdened by huge tertiary care centers that blind everyone to real health care needs. This is probably so.

Personality Differences among Specialists

Finally, I would like to make a point about a subject not mentioned at the conference. No one discussed the differences in personality between those physicians who enter primary care and those who go into the highly sophisticated, highly specialized areas of medicine. Using the Myers-Briggs Personality Inventory, it is possible to measure 16 personality types. A considerable body of literature in this field points out specific differences among the various specialties.^{4,5} At least one paper⁶ reported similar personality types in osteopathic physicians and primary care M.D.s, and both of these groups are different from the other specialties. They have a higher frequency of sensing and sensing/judging types of personality. If these personality findings are correct, then the determination of who goes into primary care and who does not may be made long before any of

the factors that were discussed at the conference.

Conclusion

As an osteopathic physician, I wish that I could say specifically that the factors I have discussed account for our high percentage of primary care physicians. Since there are no statistical data of note, I can merely put these attributes of osteopathic medical education in juxtaposition with the fact that the osteopathic profession does produce large numbers of primary care physicians and general practitioners, and they enter practice in large numbers in rural and inner-city areas of medical underservice. I shall leave it to future researchers to determine cause and effect.

References

1. American Osteopathic Association. Distribution of D.O.s. *The D.O.* 21:8A(Supplement, April 1981):41-49.
2. Moulton, M., and Renner, S. R., eds. 1986. 48. *Yearbook and Directory of Osteopathic Physicians*. Chicago, Illinois: American Osteopathic Association, October 1986.
3. Freymann, J. G. *The Odyssey and Outlook of Graduate Medical Education*. JAOA 89(1989):751-767.
4. McCauley, M. H. *The Myers Longitudinal Medical Study*. Monograph II, DHEW Contract No. 231-76-0051, Health Resources Administration, Gainesville, Florida: Center for Applications of Psychological Type, 1977.
5. Walton, F. C., Alpert, J. S., and Draba, R. E. A Comparison of Personality Variables of Fellows of the American Academy of Osteopathy and of Medical Students. JAOA 82(1982):141.
6. Walton, F. C., Alpert, J. S., and Draba, R. E. Personality Characteristics of Osteopathic Physicians as Interpreted from Scores on the Myers-Briggs Type Indicator. JAOA 83(1983):73.

Andrew Taylor Still Memorial Lecture: The third world of medicine

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Three times now I have had the humbling experience of standing in Westminster Abbey, literally at the feet of great personalities of the past—literati, statesmen, heroes—and feeling a significant sense of historic continuity. I compare today's experience on this platform to those three visits to England. One difference is that those of us who are fortunate to be chosen to deliver the Andrew Taylor Still Memorial address pass this way but one time. However, the experience is the same. To look back at the long list of distinguished and outstanding personalities who have graced this lectureship brings an undeserved halo to my head, but a warm and deep appreciation for the history of osteopathic medicine and the honorable position in which you have placed me. Trite but true, my cup runneth over.

Those of you who know me well know that I have put 40 years of energy and activity into the osteopathic profession. I have worked hard in a wide variety of functions and served in hundreds of ways. But the truth of the matter is that all my work in the profession, as extensive as it seems on paper, is infinitesimal compared to the honors my profession has bestowed upon me, the worldly education my profession has given me (and I mean more than my D.O. degree, which in itself is precious), and the mountains of self-satisfaction my profession has brought me. And I am not even talking about any worldly wealth, whatever that may be, that my profession has enabled me to acquire. I seriously believe that I need no topic today. A recital of what our profession has done for me and what it has done for each one of you serves as a self-standing memorial to Andrew Taylor Still. Trite but true, my cup runneth over.

In 1952, the French demographer Alfred Sauvy

coined the term "Third World" and, by analogy to the Third Estate, said it was "nothing and wants to be something." These small countries, unaligned with the First World of the Western Bloc or the Second World of the Eastern Bloc, were viewed as an entity containing a number of common characteristics—underdevelopment, poverty, and economic dependence on the first two worlds. Originally small, the Third World countries have now grown to constitute more than half of the world's population. By the beginning of the next century they will compose 80 percent of the world's population.

I propose that there is also a Third World in medicine, totally analogous to the political universe. It has similar characteristics. It is essentially "nothing and wants to be something" and it generally is associated with underdevelopment, poverty, and economic dependence. It, too, suffers from relative inattention. And it, too, is growing with super speed.

The First World is general medicine, which is directed primarily toward white, middle and upper class America and seems to make an assumption that everyone who requires medical care can get it and get it adequately. The Second World is the one of highly-sophisticated, highly-specialized medicine, which is aimed at being more and more involved in the minutiae of specialties and subspecialties and is concerned with bringing the highest technology to bear, regardless of cost. Quite analogous to geopolitics, we have two strong, affluent, and dominating factions.

Now there appears to arise a Third World of medicine. It comprises a group of medical fields as diverse as the countries of Third World politics but analogous to them in newness and poverty (in the

sense of paucity of attention and underdevelopment). Just as sociologists may correctly point out that there are some Third World nations making apparent progress, it can be said that some of the areas that I classify in Third World medicine have been given attention but in the overall scheme they still constitute a neglected Third World. This Third World consists primarily of: (1) geriatrics, an explosively growing medical market which is essentially being underemphasized in medical school teaching; (2) rural medicine, the care of a "different" people in a "different" environment which is still as neglected and underserved a population as it ever was; and (3) for want of a better term, minority medicine, which deals with a large number of diverse, underserved minority populations. These minority populations are groups which have special problems, in most cases particularly related to their minority status. These obviously include blacks, Haitian immigrants, Hispanic immigrants, and, less obviously, migrant workers, homosexuals, the homeless, and other groups whose minority status, or cultural backgrounds, or different life-styles lead them into conflict with the first two worlds of medicine.

The problem, as I see it, is that medical education is focused primarily on the First World and Second World. And that is understandable in view of the tremendously rapid advances that have been made in medical science and medical care since World War II. Identification of the Third World of medicine, impoverished and underserved, in no way suggests that progress or attention to medical advances be diminished. It does suggest, however, the need for widening the focus and placing more emphasis on the burgeoning Third World even though much progress has been made. Too often, in medicine as in politics, it is assumed that the overflow and largesse from the first two worlds will be sufficient to take care of the Third World.

It is almost redundant to address any American audience on "the graying of America" or "the aging of America." Everyone who has read a newspaper, watched television, or looked around knows with absolute certainty that the proportion of older people is increasing yearly and their medical problems and the problems of their care multiply geometrically. It is true that in the medical world, more and more attention is being given to problems of the elderly. But very few medical schools require their students to be trained in geriatrics. I reviewed the curricula of all the allopathic schools in the United States and found that little is required. Only three medical schools have a compulsory clerkship in geriatrics, and one of them is in combination with family practice. Only two schools (not the same ones) have didactic courses in geriatric

subjects. Mostly, such training is elective or selective. Fewer than 20 percent of medical students choose these electives—in some schools, even less than 5 percent. Some will cavalierly dismiss the problem by saying, "Geriatrics is taught in all applicable courses." While controversy rages on whether geriatrics should be a specialty, a subspecialty, or a nonspecialty, and while organizations play the "turf" game on where geriatrics belongs, thousands of medical students are graduating yearly with the message that geriatrics is not really important because it is not specifically taught.

At Southeastern College of Osteopathic Medicine (SECOM), we established at our inception an 18-hour course in geriatrics. It is taught by a full-time geriatrician with special training in and a strong commitment to the care of the older citizen. In addition to this, every one of our students is required to serve a clinical rotation or clerkship in a geriatric center, with most of them directly under the supervision of our geriatrician. Even this is perhaps insufficient training in so important a subject, but it does give every student an exposure to something we know he must face in his practice and it does send a message to him that geriatrics is an important part of medicine.

Our course in geriatrics includes emphasis on special problems and aspects of wellness and illness in the older population. We attempt to develop empathy and sensitivity in the students for the patient and for the patient's family. Geriatric aspects of pharmacology, including differential dosage, drug reactions, drug interactions, and polypharmacy, are emphasized. The dementias and Alzheimer's disease, both so prevalent, are given considerable emphasis. Plus, we stress the geriatric aspects of the myriad of diseases to which the elderly are susceptible.

Poverty and near poverty are rampant among the 12 percent of the population (in Florida, 17 percent) which is over 65 years of age, and they add to the problem of obtaining satisfactory medical care. So, this is one of those poverty-affected, underserved, looking-to-be-something segments of the Third World of medicine.

Over the many years during which America has essentially changed from a farm economy to a manufacturing and now a service economy, the population of rural America has decreased. Even so, the rural population of this country is still considerable. However, the problems of rural citizens in obtaining medical care have diminished only slightly. In this medically advanced country, thousands of small communities throughout the United States are still without adequate medical coverage. For example, a survey taken a few years ago re-

vealed that in the State of Florida there were three counties without a single physician, three counties with only one physician for the entire county, and three counties with only two physicians. Similar statistics can well be found in many other states.

Unfortunately, rural medicine receives even less attention than geriatrics. There is less discussion about the problems of rural medicine than there is about geriatrics and far fewer attempts to teach the importance of this field of medicine. In our survey of allopathic medical schools, only one lists a rural rotation, called "combined rural clerkship," and no schools list a required didactic course in rural medicine.

Several osteopathic colleges are active in teaching rural medicine to their students. At SECOM, we require a full 18-hour didactic course and every student must serve a minimum of 1 month in a rural clerkship. Many of our students serve as much as 3 months in rural medicine.

Let me relate a specific program at SECOM. We have been operating an Area Health Education Centers (AHEC) program for the past 2 years and part of AHEC is the recruitment of health professionals for geographically remote and underserved areas. As a minor part of that program, three of our students last summer devised a questionnaire for evaluating rural towns for potential practice sites. They then tested their questionnaire in two rural locations in Florida. The communities they tested were enthusiastic. The students who did the evaluations were enthusiastic and when they returned to school, they set up a meeting for a students' Rural Medicine Club. One hundred students responded to the first meeting and there were only 300 students on campus. Now these students are engaged in two projects. The first is an intensive survey of all small towns in Florida and the provision of site evaluation for those who are interested, to be followed by a published compilation of available practice sites. Second, they are attempting to network this project with other student bodies in osteopathic colleges across the country. It is important to note that osteopathic students are interested in rural medicine, and we should help them and encourage them.

Perhaps a look at the goals in the SECOM's rural medicine training program would be enlightening. Some of them may apply to other fields but certainly are specifically important for the rural population. They include: an awareness of the culture of poverty; an awareness of the problems caused by folk medicine; an awareness of the differences of rural and urban attitudes toward illness; necessity for sharpened personal diagnostic skills; working with minimal ancillary services; developing expert skills in triage; and treating patients in the face of

high degrees of uncertainty. While many of these are important in the treatment of urban patients, the added factors in rural medicine of poverty, increased episodic care, and minimal resources make the study of rural medicine so important. Rural medicine is another poverty area, underserved and "trying to be something."

There need be little argument and minimal evidence offered to establish the poor medical care of our black citizens, of Haitian immigrants, and of a large number of Hispanic migrants who have come to our shores. These minority groups also face poverty and a lack of medical facilities, much of it based on the poverty itself.

Even though the Hippocratic Oath and our professional ethics demand that all patients be provided the best possible care, this has not always been the case with "different" populations—those whose life-style brings them into conflict with society or those groups whose mores and customs and myths create conflict with orthodox medicine. You need look no further than the ravaging AIDS epidemic which is slowly spreading to all parts of the country. I would doubt that there are many who dispute the fact that a more aggressive stance would have been assumed had the disease originally not been considered primarily one of homosexuals. Because the gay life is at odds with so much of our general heterosexual population, care and consideration for victims of AIDS was far less than sympathetic. So this large group of "minorities" faces poverty and less than adequate medical care. They are certainly medically underserved and neglected. And they are a growing group.

How much attention is given to this area in our medical education institutions? Not very much. For example, only 14 medical schools list any kind of required training in human sexuality. While no schools have required training specifically in the health of cultural minorities, four list courses related to society and social issues.

From the beginning, SECOM has required for its students a course in minority medicine, a cross-cultural view of minority populations, to provide students with some insight into the group factors which may help or interfere with their medical care. Obviously, if you do not understand the patient, if you do not understand his background, if you do not understand the "baggage" he brings to your consultation room, your splendid treatment is automatically less effective. As a result, both physician and patient are totally frustrated, and medical care is less than adequate, and the perception of the medical care is poor.

We also have had from the start a course in human sexuality because we believe that an understanding of the wide variety of patterns in sexuality

is basic to the understanding of the patients who are "different" and to satisfactory medical care for them. You cannot fully understand the AIDS problem and its ramifications without understanding the details of homosexual practices and the psychological implications of that sexuality. In American medical schools, only two list required courses in human sexuality. However, several osteopathic medical schools besides SECOM, to their credit, do offer courses in human sexuality.

No one has yet suggested that attention be paid to the political Third World to the detriment of the First World or the Second World. Neither am I suggesting that orthodox medical teaching be diminished in order to accommodate understanding of the Third World of medicine. However, it is such an important and growing aspect of practice that it can no longer be shunted aside like a stepchild. Just as Zaire, for example, can no longer be treated as a minuscule, relatively unimportant political entity but has to be treated as part of the greater Third World of politics, so we must look at special areas of medicine, not as a number of scattered and relatively unimportant fields but as a total entity—the Third World of medicine.

Someway, somewhere, somehow, medical education must find a way to address these issues. They can longer be ignored. Medicine and medical education must squarely face the Third World of medicine.

In all this, the osteopathic profession holds a special and unusual and advantageous position. By virtue of the fact that 57 percent of all D.O.s are in general practice and 65 percent of all D.O.s are in primary care, the osteopathic profession has long been in the business of treating geriatric patients as part of the mainstream of medical care. With osteopathic medicine's emphasis on the holistic approach and its reputation for caring, the management of the elderly by osteopathic physicians on a concerned, day-to-day basis becomes the hallmark of the osteopathic general practitioner.

It has to be significant that 66 percent of all osteopathic physicians practice in small communities of less than 50,000 population. The attention of the osteopathic profession to rural medicine has been a mutually developing and advantageous thing. Once again, the osteopathic profession is

also in the forefront of rural medicine.

A significant portion of the remaining 34 percent of D.O.s practice in communities of over 1 million population, many among the urban underserved.

So, it appears that in most aspects of medical care for the Third World of medicine, osteopathic physicians have been playing a leadership role. Whether by design or by accident, the osteopathic profession is in the forefront of recognizing the Third World of medicine and doing something about it. We should all be cognizant of this and put ourselves in a position to advance Third World studies and to take the lead in an important, necessary, and neglected major part of medicine.

As I look back over my 40 years as an osteopathic physician, I have seen our profession grow in size, in strength, in recognition, and in prestige. I see us now making gigantic leaps forward in both First World medicine and Second World medicine. If we seize the opportunity also to distinguish ourselves in addressing Third World medicine, we can add tremendously to our progress and to our service to the public.

I have great faith in the osteopathic profession. I am proud to be a D.O. There is nothing we cannot achieve. As we absorb and utilize all of the latest medical progress, all the sophistication of diagnosis and treatment, all the latest advances, we must not abandon our heritage. We must select for our schools special kinds of students: those who will have patient empathy; those who will have sensitivity; those who will be caring; and those who will be loyal and willing to carry the banner forward. We must train them, and train them well, in First World medicine, in Second World medicine, and in Third World medicine. Then the osteopathic profession can go forward uninterrupted in its climb to achievement, and, 30 or 40 years from now, one of today's students, maybe one of mine, will be the Andrew Taylor Still Memorial lecturer and again proclaim the vitality of the osteopathic profession.

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Item 4

SPECIAL ARTICLE

EVALUATION OF A SELECTIVE MEDICAL SCHOOL ADMISSIONS POLICY TO INCREASE THE NUMBER OF FAMILY PHYSICIANS IN RURAL AND UNDERSERVED AREAS

HOWARD K. RABINOWITZ, M.D.

Abstract Jefferson Medical College initiated the Physician Shortage Area Program (PSAP) in 1974; this program preferentially admits medical school applicants from rural backgrounds who intend to practice family medicine in rural and underserved areas.

Evaluation of the program has shown that PSAP graduates from the classes of 1978 to 1985 have performed slightly less well than their peers (non-PSAP) during medical school, although there was no difference in attrition between the two groups. Nor did the performance of PSAP and non-PSAP graduates differ during their postgraduate training.

PSAP graduates from the classes of 1978 to 1981 were almost five times as likely as non-PSAP graduates to practice family medicine (59.6 vs. 12.6 percent,

$P < 0.001$), three times as likely to practice in rural areas (37.8 to 42.2 percent vs. 10.0 to 11.8 percent, $P < 0.001$), and two to four times as likely to practice in areas where there is a physician shortage (26.7 to 40.0 percent vs. 9.2 to 11.2 percent, $P < 0.01$). They were 7 to 10 times as likely as their peers to combine a career in family medicine with practice in a rural or underserved area (24.4 to 31.1 percent vs. 3.1 to 3.9 percent, $P < 0.001$), thereby fulfilling the goals of the PSAP.

This study concludes that the medical school admissions process can have a major influence on the specialty choice and geographic practice location of physicians, and suggests one mechanism for increasing the number of family physicians in rural and underserved areas. (*N Engl J Med* 1988; 319:480-6.)

FOR more than 60 years, the geographic maldistribution of physicians in the United States has been a major health care problem.¹⁻⁶ Rural areas have been particularly underserved, especially by primary care physicians.⁵⁻⁹ With recent increases in the overall number of physicians, controversy has developed about whether doctors are still needed in rural areas, or whether the general oversupply of physicians will "trickle down" to meet the rural needs.¹⁰⁻¹⁴ Even if the distribution of physicians in rural areas is improving, however, the effects of this trend appear to be small.^{9,15,16} and future health manpower policies addressing the national oversupply of physicians (e.g., decreasing the U.S. medical school enrollment or restricting the entry of foreign medical graduates) may well eliminate any small gains in redistribution that have occurred.^{3,5,17} The shortage of physicians in rural areas, therefore, is likely to continue as a major health care problem in the future.

A number of ways to address this problem have been proposed, including scholarship and loan-forgiveness programs, the establishment of rural clerkships during medical school, the development of departments of family medicine, community recruitment programs, and the National Health Service Corps.^{3,4} Many investigators have advocated intervention in the medical school admissions process as one means of increasing the number of rural physicians.^{4,5,18-20} In previous studies, two subgroups of physicians have been consistently defined as most likely to practice in rural areas: physicians who grew up in such areas, and family physicians or general practitioners.^{2,3,5,19-23} Using this information, as well as the experience of the University of Illinois, where a special admissions policy to increase the number of rural general practitioners was successful,²⁴ Jefferson Medi-

cal College initiated the Physician Shortage Area Program (PSAP) in 1974. This program, which has been described elsewhere,²⁵ preferentially selects applicants for medical school from rural backgrounds who intend to practice family medicine in underserved rural areas. This paper presents the results of a 12-year follow-up of the PSAP and evaluates the program's success with regard to its goal of increasing the number of family physicians in underserved rural areas.

DESCRIPTION OF THE PROGRAM

Jefferson Medical College began admitting students to the PSAP in 1974. Initially, 12 places in each class of 223 students were reserved for PSAP students, and in 1978 this number increased to 24. Applicants learned about the program either from the admissions brochure or from supplementary material mailed to them on receipt of their primary application to Jefferson. They were invited to apply to the program if they lived or grew up in, or had strong family or personal ties to, a medically underserved area of Pennsylvania—an area so designated by the Pennsylvania Department of Health or federally designated as a Health Manpower Shortage Area (HMSA). In addition, applicants were required to indicate a firm commitment to practice family medicine in an underserved area. Originally, applicants from both rural and urban underserved areas were eligible for the program, but a decision was made early on to consider only those from rural areas (who planned to return to rural areas), and only one applicant was ever admitted from an urban area. The incentives for students to apply to the program included special consideration in admissions, preferential selection of family medicine courses, and financial aid (almost entirely in the form of repayable loans) in excess of that usually awarded to Jefferson students.

Interested students applied specifically to the PSAP by completing a supplementary form and supplying three letters of recommendation. Applicants agreed to

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participate in the family medicine curriculum during medical school, which included having a member of the Department of Family Medicine as their faculty adviser, taking their required junior clerkship in family medicine at one of two available rural locations, and taking their senior track (major) in family medicine, which included a preceptorship with a rural family physician. Applicants also committed themselves to a residency in family medicine and to practicing family medicine in an underserved area, although there was no formal mechanism to ensure compliance with these expectations.

The applicants to the PSAP were evaluated by a subcommittee of the Committee on Admissions, whose recommendations were sent to the full committee for final action. Only academically qualified students were recommended for acceptance, but students with less competitive academic credentials were accepted if they came from a rural background and were judged to have a strong commitment to practice family medicine in an underserved area, on the basis of their PSAP application and personal interview. Previous results have shown that the undergraduate college grade-point average for PSAP students was similar to that of their peers outside the program (PSAP averages in science and non-science were 3.46 and 3.52, respectively; non-PSAP averages were 3.53 and 3.54), although students in the program had slightly lower scores on the Medical College Admissions Test (PSAP subtest scores, 9.1 to 9.6; non-PSAP scores, 9.4 to 10.3).²⁵

METHODS

Data on the age, sex, academic performance, and postgraduate specialty choice of the PSAP students and their peers in the eight classes graduating from 1978 to 1985 were retrieved electronically from the data base of the Jefferson Longitudinal Study, provided through the Center for Research in Medical Education and Health Care at Jefferson Medical College.²⁶ The test was used to compare the academic performance of PSAP students and their peers during medical school, as measured by their first- and second-year grade-point average, weighted clerkship ratings (superior = 5, good = 4, satisfactory = 3, pass = 2, and unsatisfactory = 1), and written examination scores in the required third-year clinical clerkships (in family medicine, internal medicine, pediatrics, psychiatry, obstetrics and gynecology, surgery, and surgical specialties). The *t*-test was also used to compare the performance of PSAP students and their classmates on the examination of the National Board of Medical Examiners, Parts I, II, and III, and their postgraduate performance in the four areas of medical knowledge, data-gathering skills, clinical judgment, and professional attitudes, as measured by a rating system described elsewhere.²⁷ Finally, the two groups of students were compared by *t*-test with regard to age at entry to medical school and by chi-square test with regard to sex, postgraduate specialty choice of family medicine, and attrition (withdrawal and dismissal).

The data with which to evaluate the place of practice and choice of specialty made by PSAP graduates and their classmates from the first four classes (1978 to 1981) were provided by the Alumni Association of Jefferson Medical College in May 1986. This information is considered highly accurate because the Alumni Association updates its data every three months and pays for return mail from unknown or inaccurate addresses. For each Jefferson graduate, data were obtained about his or her self-reported specialty and address, by city and state, which were then converted to the corresponding county. Because of the availability of additional demographic data, only county and state data were used to identify the location of practice. The county identified by the alumni data was considered

to be the county in which each graduate practiced, even though in some instances the alumni address might actually be that of the home and not the office. In these cases, it was assumed that the physician's home would be in the same county, or in an adjacent county of similar rurality and similar status with respect to physician shortage as that of the office location. To check the accuracy of the alumni data regarding the county of practice, a random sample of 8 PSAP and 24 non-PSAP graduates was chosen (17 and 2.8 percent, respectively), and the practice county was confirmed for 93.8 percent of the sample graduates.

The alumni data were then merged with several county variables in the 1986 Area Resource File (U.S. Department of Commerce). American Medical Association county group codes (1978) measure the population density of a county by assigning a value of 1 to the least-metropolitan counties and 9 to the most. Counties in groups 6 to 9 are classified as Standard Metropolitan Statistical Area (SMSA) counties, and those in groups 1 to 5 are classified as non-SMSA (nonmetropolitan) counties. Health Manpower Shortage Area Codes for Primary Care (1980) list whether the entire county, part of it, or none of it is a shortage area. Other variables included the percentage of the county population that is rural (1980), the county population in 1980, and the number of all active nonfederal M.D.s in patient care and all active nonfederal D.O.s (doctors of osteopathy) (an estimate of all active nonfederal D.O.s in patient care) in the specialties of family practice and active nonfederal D.O.s in the specialties of internal medicine, pediatrics, and obstetrics and gynecology (the four specialties used to determine federal primary care HMSAs).

This analysis is based on two different definitions of "rural": first, non-SMSA counties — i.e., county groups 1 to 5; and second, counties in which more than 50 percent of the population was classified as rural. Although there is no standard definition of an absolute "physician shortage area," two definitions were used here. First, counties were considered to be shortage areas if the entire county was a shortage area according to HMSA codes, or if a portion of the county was a shortage area and the county was also a rural (i.e., non-SMSA) county. And second, counties were considered to be shortage areas if their ratio of the total population to the number of physicians (active nonfederal M.D.s in patient care and active nonfederal D.O.s in the four specialties used to determine federal primary care HMSAs) exceeded 2000 to 1 (the minimal acceptable ratio proposed in the National Guidelines for Health Planning, P.L. 93-641, 1979). PSAP and non-PSAP graduates were then compared (chi-square test) to determine whether their place of practice was in a rural area or one with a physician shortage, according to each of these definitions. In addition, PSAP graduates were compared with non-PSAP graduates (chi-square test) with respect to the number of physicians who were practicing family medicine.

The self-reported specialty of each Jefferson graduate was then combined with the location of his or her practice — i.e., in a rural or shortage area. The PSAP and non-PSAP graduates were then compared (chi-square test) to determine whether they were practicing family medicine in a rural or underserved area, thereby fulfilling the goals of the program.

RESULTS

Of 139 PSAP students admitted into the classes of 1978 to 1985, 133 graduated. This level of attrition (2.9 percent) was not statistically different from that of the remaining students (2.7 percent). In addition, there was no significant difference in the male:female ratio between the PSAP group (82 to 18 percent) and the other students (80 to 20 percent). The average age of the PSAP students at entry to medical school (22.9 years) was slightly higher than that of the non-PSAP students (22.2 years) ($t = 4.42$, $P < 0.001$).

Medical School and Postgraduate Performance

The academic performance of PSAP students from the classes of 1978 to 1985, as measured by the first- and second-year grade-point averages and the scores on the third-year clerkship examinations, was statisti-

cally lower than that of their peers (Table 1). There was no significant difference between PSAP students and their classmates in clinical performance, however, as measured by the mean weighted third-year clerkship ratings.

On the examination of the National Board of Medical Examiners, Parts I and II, non-PSAP students performed significantly better than PSAP students. There was no significant difference between the two groups on Part III, nor in the postgraduate performance ratings in the four areas of medical knowledge, data-gathering skills, clinical judgment, and professional attitudes (Table 1).

Finally, 56 percent of the PSAP graduates (76 of 135) took their first postgraduate-year residency training in family medicine, as compared with 13 percent of their peers (203 of 1596) ($\chi^2 = 171.6$, $df = 1$, $P < 0.001$). In addition, 28 PSAP graduates (21 percent) entered postgraduate training in internal medicine, and 3 (2 percent) in pediatrics, as compared with 35 percent of non-PSAP graduates in internal medicine and 6 percent in pediatrics.

Location of Practice

Data about the location of practice were available for 45 of 47 PSAP graduates (95.7 percent) and for 798 of 843 non-PSAP graduates (94.7 percent) in the classes graduating from 1978 to 1981. As shown in Table 2, PSAP alumni were significantly more likely than their non-PSAP classmates to practice in non-metropolitan (non-SMSA) counties (42.2 vs. 11.8 percent). Even within metropolitan areas, the majority of PSAP graduates were located in the least populated counties, whereas most of their counterparts were in the largest metropolitan counties. Similarly, PSAP alumni were much more likely than their peers to be located in counties in which more than half the population is rural (37.8 vs. 10.0 percent) (Table 3). Conversely, most non-PSAP graduates were

Table 2. Geographic Distribution of Medical Practices of Graduates of Jefferson Medical College, 1978 to 1981, According to the Number of Inhabitants of the County Where the Practice Was Located.

County Code*	PSAP (N = 45)	Non-PSAP (N = 798)
1	0	1
2	2	12
3	0	20
4	8	57
5	0	4
Subtotal, non-SMSA counties (1-5)†	19 (42.2%)	94 (11.8%)
6	14	114
7	1	117
8	10	424
9	1	49
Subtotal, SMSA counties (6-9)	26 (57.8%)	704 (88.2%)

*Counties are ranked as follows: 1, nonmetropolitan counties with fewer than 9999 inhabitants; 2, nonmetropolitan counties with 10,000 to 24,999 inhabitants; 3, nonmetropolitan counties with 25,000 to 49,999 inhabitants; 4, nonmetropolitan counties with more than 50,000 inhabitants; 5, counties considered potential SMSAs; 6, counties in SMSAs with 50,000 to 499,999 inhabitants; 7, counties in SMSAs with 500,000 to 999,999 inhabitants; 8, counties in SMSAs with 1,000,000 to 4,999,999 inhabitants; and 9, counties with 5,000,000 or more inhabitants.

† $\chi^2 = 34.0$, $df = 1$, $P < 0.001$, as compared with graduates practicing in SMSA counties (6-9).

located in the most urban areas (where 10 percent or less of the population is rural).

Regarding areas of physician shortage, 18 of 45 PSAP graduates (40.0 percent) were located in counties listed either entirely or (for rural counties) partly as HMSA counties — a rate four times that of non-PSAP graduates (9.2 percent) ($\chi^2 = 42.1$, $df = 1$, $P < 0.001$). Even in the few instances in which the entire county was considered a shortage area, PSAP alumni were three times as likely to practice there as non-PSAP alumni (8.9 vs. 2.8 percent) ($P < 0.05$, Fisher's exact test, one-sided). PSAP graduates were also significantly more likely than their classmates to practice in areas with a physician shortage, defined as those with a ratio of population to physician in excess of 2000 to 1 (26.7 vs. 11.2 percent) (Table 4).

Choice of Specialty

Of the 47 students who graduated from the PSAP from 1978 to 1981, 28 (59.6 percent) were practicing family medicine — almost five times the percentage of non-PSAP graduates to do so (12.6 percent) ($\chi^2 = 76.49$, $df = 1$, $P < 0.001$). This represents 96.6 percent of the 29 PSAP graduates who originally entered first-year postgraduate training in family medicine. In addition, six PSAP graduates (12.8 percent) were practicing internal medicine, and one was practicing pediatrics (2.1 percent), as compared with 30.5 percent of non-PSAP graduates in internal medicine and 3.3 percent in pediatrics.

Location of Practice Combined with Choice of Specialty

When the specialties chosen by Jefferson graduates were combined with the locations of their practice, PSAP graduates were significantly more likely to practice family medicine in a rural area or one with a physician shortage (24.4 to 31.1 percent) than their peers (3.1 to 3.9 percent). This 7- to 10-fold difference

Table 1. Measures of Academic Performance among PSAP and Non-PSAP Students in the Graduating Classes of 1978 to 1985 at Jefferson Medical College.*

Performance Measure	PSAP		Non-PSAP		F Value†
	Mean	SD	Mean	SD	
Medical school					
GPA, year 1	81.9	3.9	83.0	4.7	3.131
GPA, year 2	80.9	3.9	82.1	4.6	3.272
Year 3 clerkship examination scores	81.4	3.8	82.2	4.5	2.388
Year 3 weighted clerkship ratings	4.13	0.2	4.15	0.3	0.75
NBME, part I	494	75	521	91	3.991
NBME, part II	508	82	531	93	2.821
Postgraduate					
NBME, part III	534	86	525	94	0.89
Medical knowledge	3.05	0.7	3.08	0.7	0.43
Data-gathering skills	3.13	0.5	3.16	0.6	0.49
Clinical judgment	3.09	0.6	3.12	0.6	0.47
Professional attitudes	3.27	0.6	3.30	0.6	0.50

*The numbers of students ranged from 88 to 135 PSAP students and from 1078 to 1500 non-PSAP students. Because complete data were not available for all performance measures, PSAP denotes Physician Shortage Area Program; GPA, grade-point average; and NBME, National Board of Medical Examiners.

†Two-sided t test.

DF = 0.01

DF = 0.07

Table 3. Distribution of Medical Practices of Graduates of Jefferson Medical College, 1978 to 1981, According to the Percentage of the Population of the County Where the Practice Was Located (Who Were Considered to Be Rural)

RURAL POPULATION OF COUNTY %	PSAP (N = 45)	Non-PSAP (N = 708)
0-10	11	446
11-20	5	149
21-30	4	51
31-40	4	34
41-50	4	38
Subtotal, <50%	28 (62.2%)	718 (90.0%)
51-60	3	26
61-70	3	27
71-80	3	14
81-90	6	7
91-100	2	6
Subtotal, >50%	17 (37.8%)	80 (10.0%)

* $\chi^2 = 51.2$, $df = 1$, $P < 0.001$, as compared with graduates practicing in counties where <50 percent of the population is rural.

was not only statistically significant but, as seen in Figures 1 and 2, it persisted under each of the two definitions given for rural areas as well as those for areas with a physician shortage (χ^2 range, 45.6 to 75.6, $df = 1$, $P < 0.001$). PSAP graduates were also nine times as likely as their classmates to practice family medicine in areas in which the entire county had been designated an HMSA (8.9 vs. 0.9 percent) ($\chi^2 = 21.2$, $df = 1$, $P < 0.001$).

Even among Jefferson graduates practicing one of the primary care specialties (family medicine, internal medicine, or pediatrics), PSAP graduates were four to six times as likely as their non-PSAP counterparts to practice in rural areas or those with a physician shortage (24.4 to 31.1 percent vs. 5.4 to 6.8 percent) (χ^2 range, 23.6 to 44.7, $df = 1$, $P < 0.001$) (Fig. 1 and 2). In fact, specialists in pediatrics and internal medicine were unlikely to practice in such areas, whether they were in the PSAP (0 percent) or outside the program (2.0 to 2.9 percent). Similarly, physicians in the nonprimary care specialties were unlikely to practice in rural areas or areas underserved by physicians (PSAP, 2.2 to 11.1 percent; non-PSAP, 3.8 to 5.4 percent).

Of the 29 PSAP graduates who did not practice family medicine in either a rural area or one with a physician shortage, 7 practiced family medicine in counties at the smallest metropolitan level (SMSA group 6). Another 10 practiced in a rural or small metropolitan county, or one with a physician shortage, but in a specialty other than family medicine; and 9 more practiced one of the three primary care specialties, but in a large metropolitan county (SMSA groups 7 to 9). Only 3 of the 45 PSAP graduates (6.7 percent) were practicing a nonprimary care specialty in a large metropolitan county.

DISCUSSION

Jefferson Medical College created the PSAP in 1974 to increase the number of family physicians in underserved rural areas. Because of an awareness that 13

percent of the students from the University of Illinois special admissions program had been dismissed for academic reasons,²⁴ successful academic performance has been critically important to the PSAP from the outset. The results presented in this paper show that the academic performance of PSAP students in medical school (as measured by the mean grade-point average, examination grades, and scores on the National Board of Medical Examiners, Parts I and II) was slightly lower than that of their peers. The magnitude of difference, however, was of little practical importance, and may have been related to the difference between the two groups in admission credentials. Also, students in the accelerated five-year Cooperative Program in Medicine with Pennsylvania State University — a group of students with exceptionally high academic credentials — made up 15 percent of the non-PSAP group, which may have accounted for the slightly higher performance of this group.²⁶ It is critically important, however, that there was no significant difference in the medical school attrition rate between PSAP students and their peers. And during postgraduate training, there was no difference in performance between the two groups, as measured by scores on the National Board of Medical Examiners, Part III, and the postgraduate ratings.

Most important, PSAP graduates were 7 to 10 times as likely as their peers to combine a career in family medicine with practice in a rural or underserved area. Not all PSAP graduates have fulfilled the goals of the program. But by broadening the criteria to include the practice of any medical specialty in a rural or small metropolitan county or one with a physician shortage, or the practice of one of the three primary care specialties in a large metropolitan county, the overwhelming majority of PSAP graduates (93.3 percent) were successful in improving the distribution of physicians according to geographic location and specialty.

Although the proportion of Jefferson's PSAP graduates practicing family medicine in rural or under-

Table 4. Distribution of Medical Practices of Graduates of Jefferson Medical College, 1978 to 1981, According to the Population-Physician Ratio in the County Where the Practice Is Located

POPULATION-PHYSICIAN RATIO*	PSAP (N = 45)	Non-PSAP (N = 708)
0-500	2	62
501-1000	8	283
1001-1500	10	281
1501-2000	13	86
Subtotal, <2000	33 (73.3%)	709 (88.9%)
2001-2500	5	50
2501-3000	4	18
3001-3500	1	8
>3501	0	11
Subtotal, >2000†	12 (26.7%)	88 (11.1%)

*The population-physician ratio represents the 1980 population divided by the number of active nonfederal patients care M.D.s and active nonfederal D.O.s in the four specialties of family practice and general practice, internal medicine, pediatrics, and obstetrics and gynecology.

† $\chi^2 = 9.7$, $df = 1$, $P < 0.01$, as compared with graduates practicing in counties where the population-physician ratio <2000.

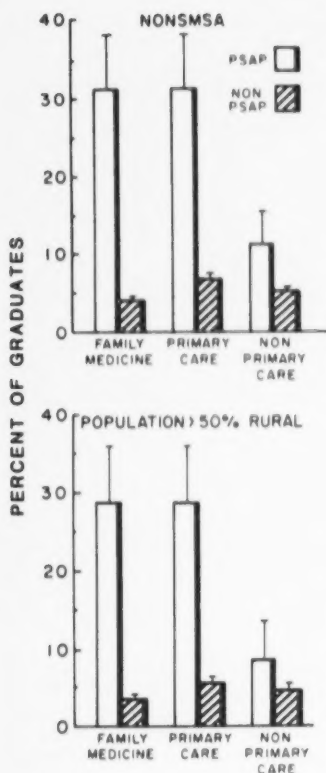


Figure 1. Percentage ($\pm$ SE) of PSAP and Non-PSAP Graduates Practicing in Rural Counties in Family Medicine, Primary Care (Family Medicine, Internal Medicine, and Pediatrics), and All Other Nonprimary Care Specialties.

Rural counties are defined as counties outside an SMSA (i.e., county groups 1 to 5) or as counties in which more than half the population is rural. Data shown represent graduates of Jefferson Medical College, 1978 to 1981.

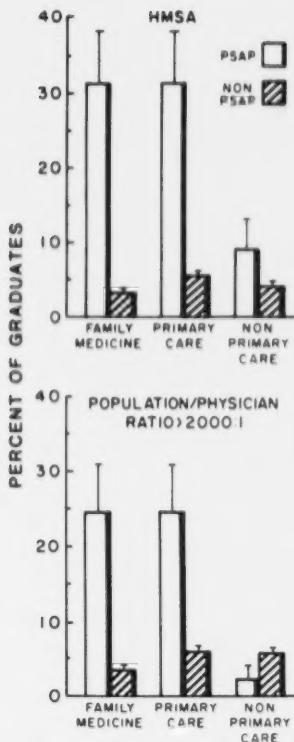
to define a rural area or one with a shortage of physicians,^{1,5} this study, like others, has used the non-SMSA county (county groups 1 to 5) to define rurality, and the federally designated HMSAs at the level of the nonmetropolitan county to represent underserved areas.^{11,12} These do not equate perfectly with either rural or medically underserved areas, but these counties are primarily rural, and most areas of physician shortage are located here. In addition, to ensure that the associations were not spurious, second definitions of rural and underserved areas were used in this study that had considerable agreement with the non-SMSA and HMSA designations.

One limitation of the study is the possibility that some PSAP students might have entered medical school and chosen to practice family medicine in underserved rural areas even without the program. However, 78.4 percent of the PSAP students were not accepted by any medical school other than Jefferson, according to data from the Association of American Medical Colleges Joint Acceptance Reports, which were available for the graduating classes of 1978, 1980, and 1981. A similar percentage would probably not have been accepted to Jefferson without the PSAP, a review of the admission credentials of all Jefferson matriculants during the eight years of the study suggests, presumably, they had less competitive, though acceptable, academic credentials and were less urbane than their peers. In addition, previous data showing that PSAP students were almost twice as likely to embark on a career in family medicine as others who entered Jefferson with plans to become a family physician²⁵ suggest that even students who would have been admitted through the regular process would have been less likely to practice family medicine in rural and underserved areas without the personal commitment, financial aid, career counseling, and family medicine curriculum provided by the PSAP.

Three other matters also need to be mentioned regarding the PSAP. First, because many areas with a physician shortage are located in the inner city, the PSAP addresses only a part of the overall problem of physician maldistribution in this country. Second, the program's graduates, like other recent U.S. graduates, have had little effect on the most rural areas of the country,^{3,11,22} even though 8.9 percent of the graduates of the PSAP did enter counties with the greatest shortage of physicians (entire-county HMSAs). Finally, over the past few years, the number of applicants to the PSAP has decreased. Although this may parallel the national trend toward declining medical school admissions, recent data indicate a de-

served areas was many times greater than that of their peers, it is similar to that of all residency-trained U.S. family physicians (38.1 percent practicing in non-SMSA counties, 6.1 percent in entire-county HMSAs).²² Because the PSAP takes place in a medical school in the Northeast — an area with the lowest percentage of graduates who enter family medicine, the highest physician population ratio, and the lowest percentage of the population living in non-SMSA areas in the nation,^{6,21,29} — the effect of such a program may be even greater in other areas of the country that are more rural and have fewer physicians.

Because no definitive criteria have been developed



cline in the percentage of entering freshman medical students who grew up in rural areas, small towns, and towns — a disturbing sign for the future of rural practice.³¹

Intervention in the process of admissions to medical school has both advocates and opponents. However, it is generally accepted that meeting the health staffing needs of the country is a legitimate concern of medical education.^{3,9} In addition, the current admissions policy may not be one of natural selection, but one biased in favor of urban candidates entering the subspecialties, since most admissions committees are made up of urban faculty members who are subspecialists. Previous data have shown that characteristics that predict subsequent performance differ depending on the rural or urban origin of students, and that nonurban

Figure 2. Percentage (+SE) of PSAP and Non-PSAP Graduates in Counties with a Physician Shortage Who Are Practicing Family Medicine, Primary Care (Family Medicine, Internal Medicine, and Pediatrics), and All Other Nonprimary Care Specialties. Counties with a physician shortage are defined as areas in which a part (of a rural county) or all of the county is considered an HMSA, or counties in which the population/physician ratio is greater than 2000 to 1. Data shown represent graduates of Jefferson Medical College, 1978 to 1981.

people seem to be more adept in selecting nonurban students for admission.³¹

In summary, the results of this study indicate that the medical school admissions process can have a significant influence on the specialty and geographic distribution of physicians, and may provide one means of increasing the number of family physicians in rural and underserved areas. The study did not explain which variables were associated with the program's success, however. Students were admitted because of their rural background and strong commitment to career goals, but the PSAP also provided financial aid, family physicians as advisers, rural clerkship and preceptorship locations, and a senior major in family medicine. The effect of these and other variables (e.g., the role of the spouse, the location of residency training, and perceived career opportunities) will be analyzed after additional data are collected by questionnaire from PSAP and non-PSAP graduates, in order to identify better the variables that are most predictive of family practice in rural and underserved areas.

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REFERENCES

1. Pusey WA. Medical education and medical service. I. The situation. *JAMA* 1925; 84:281-5.
2. Weisskotten FG, Wiggins WS, Altenderfer ME, Guxch M, Tipner A. Trends in medical practice: an analysis of the distribution and characteristics of medical college graduates, 1915-1980. *J Med Educ* 1980; 55:1071-121.
3. Ernst RL, Yett DE. Physician location and specialty choice. Ann Arbor, Mich.: Health Administration Press; 1985.
4. Madison DR. Managing a chronic problem: the rural physician shortage. *Ann Intern Med* 1980; 92:852-4.
5. Report of the Graduate Medical Education National Advisory Committee to the Secretary, Department of Health and Human Services Vol. 3. Geographic distribution technical panel. Washington, D.C.: Government Printing Office; 1980. (DHHS publication no. (HRA) 81-653.)
6. Scheffler RM, Westfeld N, Ruby G, Eates EH. A manpower policy for primary health care. *N Engl J Med* 1978; 298:1058-62.
7. Geyman JP. Family practice: foundation of changing health care. Norwalk, Conn.: Appleton-Century-Crofts; 1985.
8. American Medical Association. Physician characteristics and distribution in the U.S., 1986. Chicago: American Medical Association; 1986.
9. Ginsberg E, ed. From physician shortage to patient shortage: the uncertain future of medical practice. Boulder, Colo.: Westview Press; 1986:1-10.
10. Schwartz WB, Newhouse JP, Rosen BW, Williams AP. The changing geographic distribution of board-certified physicians. *N Engl J Med* 1980; 303:1032-8.
11. Friesen MA, Cantwell JR. Geographic distribution of physicians: past trends and future influences. *Inquiry* 1982; 19:44-50.
12. Cordes SM, Lucic TW. Changes in Pennsylvania's physician supply. *Pa Med* 1985; 88:55-8.

13. Hicks LJ. Social policy implications of physician shortage areas in Missouri. *Am J Public Health* 1984; 74:1316-21.
14. Cooper JK, Johnson TP. Physician distribution — will it get worse instead of better? *Am J Med* 1983; 75:4-6.
15. Rosenblatt RA. Geographic distribution of board-certified physicians. *N Engl J Med* 1981; 304:916.
16. Budenz PP. The 'trickle-down' theory — is that any way to make policy? *Am J Public Health* 1984; 74:1303-4.
17. Iglehart JK. The future supply of physicians. *N Engl J Med* 1986; 314:860-4.
18. Rabonowitz HK. Estimating the percentage of primary care rural physicians produced by regular and special admissions policies. *J Med Educ* 1986; 61:598-620.
19. Cullison S, Reid C, Colwell JM. Medical school admissions, specialty selection, and distribution of physicians. *JAMA* 1976; 235:502-5.
20. Roble BL. Physicians' views of medical practice in nonmetropolitan communities. *Public Health Rep* 1970; 85:11-7.
21. Cooper JK, Heald R, Samuels M. The decision for rural practice. *J Med Educ* 1972; 47:939-44.
22. Black RR, Schmitting G, Stern TL. Characteristics and practice patterns of family practice residency graduates in the United States. *J Fam Pract* 1980; 11:763-76.
23. Schmitting G, Black RR, Stern TL, Clinton C. Practice locations of family practice residency graduates. *J Med Educ* 1981; 56:709-16.
24. Mattson DE, Stehr DE, Wolf RE. Evaluation of a program designed to produce rural physicians. *J Med Educ* 1975; 48:321-31.
25. Rabonowitz HK. A program to recruit and educate medical students to practice family medicine in underserved areas. *JAMA* 1983; 249:1038-41.
26. Herman MW, Veloski J. Family medicine and primary care trends and student characteristics. *J Med Educ* 1977; 52:90-106.
27. Veloski J, Herman MW, Gonella JS, Zelenik C, Kellow WE. Relationships between performance in medical school and first postgraduate year. *J Med Educ* 1979; 54:906-16.
28. Herman MW, Veloski JJ. Premedical training, personal characteristics and performance in medical school. *Med Educ* 1981; 15:363-7.
29. Schmitting G, Clinton C, Taux C. Entry of U.S. medical school graduates into family practice residencies, 1983-84. *Fam Med* 1986; 18:296-300.
30. Tucker CG, Beran RE. Trends in medical school applicants and matriculants, 1978-1986. Washington, D.C.: Association of American Medical Colleges, 1987.
31. Wolloughby TL, Arnold L, Calkins V. Personal characteristics and achievements of medical students from urban and nonurban areas. *J Med Educ* 1981; 56:717-26.

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Caring for the Uninsured and Underinsured

Primary Care Physician Supply and the Medically Underserved

A Status Report and Recommendations

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QUALITY health care for all Americans has been viewed as an individual right rather than a privilege. Today, many Americans lack access to an ongoing source of primary care and, therefore, to essential clinical preventive services. Differences in health status between subsets of our population continue to be a national embarrassment. Providing equal access to primary health care has been a problem for this nation throughout its history.

What is needed is a body of information and general principles concerning man as a whole and man in society that will provide an intellectual framework into which the lessons of practical experience can be fitted. This background will be partly biologic, but partly it will be social and humanistic, for it will deal with man as a total complex, integrated, social being. Medical schools and teaching hospitals should prepare many more physicians than now exist who will have the desire and the qualifications to render comprehensive, continuing health services, including preventive measures, early diagnosis, rehabilitation and supportive therapy, as well as the diagnosis and treatment of acute or episodic disease states.¹

During the 1960s, the Willard and

Folsom commissions, echoing the Millis report, recommended that additional physicians be trained, in part because of a projected decline in the number of general practitioners and a concurrent increase in the number of physicians specializing. As a result, several events transpired that influenced medical schools and teaching hospitals to place greater emphasis on primary care:

- Recognition of family practice as a medical specialty;
- The establishment of a number of new state-supported medical schools with mission statements that included primary care training and the multidisciplinary team approach as central themes;
- Federal funding for primary care training, including physicians, dentists, nurses, nurse-practitioners, certified nurse-midwives, and physician assistants;
- Federal scholarship support for medical education through the National Health Service Corps (NHSC); and
- Federal support for community and migrant health centers.²

In 1971, the federal government, through Title VII of the Public Health Service Act, began supporting the training of primary care physicians when it recognized that segments of the nation's population were not receiving and had no access to primary care. The legislation enabling support of training was based on the assumption that an increase in the aggregate supply would

produce an increase in its generalist and primary care components and alleviate geographic shortages in the availability of primary care services.

Directed by these assumptions, federal training support initially focused on producing an increased number of well-trained primary care physicians and paid relatively little attention to incentives to practice in underserved areas. During the evolution of the training grant programs, funding incentives or priorities were offered to prospective grantees who demonstrated a commitment to providing primary care services in medically underserved areas. The Area Health Education Centers were initiated in 1972 to address specialty maldistribution, particularly in rural areas.³

To provide one-door primary care services directly to medically underserved and disadvantaged populations, the federal government supported the development of community and migrant health centers.⁴ Despite their rapid growth and continued support in the 1970s, these centers had difficulties recruiting and retaining a sufficient number of physicians. To improve the delivery of services where health personnel were inadequate, including community and migrant health centers, an identifiable unit within the Public Health Service was established—the NHSC.⁵

In 1976, the Health Professions Education Assistance Act (PL 94-484) included a number of provisions intended

¹From the Health Resources and Services Administration, Public Health Service, Department of Health and Human Services, Rockville, MD.

²The views expressed in this article are strictly those of the authors. No official support or endorsement by the Department of Health and Human Services or any of its components is intended or should be inferred.

³Report requests to Department of Health and Human Services, 5902 Fishers Ln., Room 6-03, Rockville, MD 20857 (Dr. Politzer).

to ease geographic and specialty maldistribution. This legislation greatly increased funding authorizations for the NHSC and its scholarship program and augmented primary care training support.

The 1980s brought reductions in federal support and cost-containment policies and strategies that were to have a profound effect on the training and distribution of health professionals and ultimately on access to care in underserved areas. The forecasted oversupply of physicians by the Graduate Medical Education National Advisory Committee lulled policymakers and educators into the assumption that diffusion of primary care providers would eventually alleviate manpower shortages.¹

To a large extent, the continuance of the community and migrant health centers network was dependent on the supply of well-trained NHSC providers. The reduction in support for the NHSC coupled with the increased competition from large managed-care systems² forced community and migrant health centers to marshal new strategies for recruiting and retaining providers.³ The NHSC has recorded retention rates in areas with shortages ranging from as high as 50% to as low as 10%, depending on the definition of retention.⁴ However, the number of areas with shortages and the number of providers needed to eliminate shortage area designations have remained constant, at 1900 and 4300, respectively.⁵ Denuding federal financial support of the NHSC during the latter half of the 1980s jeopardized its field strength. Although recent legislation has substantially increased support for the NHSC, it is likely that several years will pass before there is a significant impact.

Studies have demonstrated that primary care physicians trained as Millie⁶ described have substantially improved access to care for minorities, the poor, and those living in inner cities and rural areas. Graduates in general internal medicine provide care to a previously underserved part of America, treating more elderly, nonwhite, low-income, and "underserved" individuals.⁷ Pediatric primary care graduates have entered practice in underserved urban areas in greater proportions than graduates of traditional programs in pediatrics.⁸ Family practice graduates have established rural practices in much greater numbers than physicians in other specialties.⁹

Despite these successes, years of support for primary care training, and the widely recognized need for more physicians to enter primary care, there has

been no significant increase in the proportion of medical school graduates who ultimately select primary care careers. More important, experts believe the situation will deteriorate because interest in primary care careers, both by pre-medical students and by medical students, is waning.¹⁰ In the early 1980s, nearly 40% of graduating seniors chose primary care careers. By 1989 that percentage had dropped to about 25%.¹¹

Physicians are choosing high-paying, technology-based specialties in place of the primary care specialties, particularly general/family practice. Rather than moving into underserved or unserved areas, even generalists are concentrating in large academic health centers. Two partial exceptions to this trend are the specialty and practice choices of osteopathic physicians and underrepresented minority physicians, a majority of whom still go into primary care and often serve in rural or other underserved communities.^{12,13} It is appropriate to concentrate less on the aggregate physician supply and more on preparing and making that supply available and accessible to those most in need.¹⁴

This article discusses the current status of the primary care physician supply, the pending erosion of that supply, the role of the federal government in the training of primary care physicians, the difficulties of financing primary care training, and the influence of community-based training on career decisions. It then recommends courses of action to stem erosion and produce an adequate supply of primary care physicians to serve in the most severely underserved areas. The authors predicate their discussion and recommendations on the following assumptions:

1. Although economic forces define many of the realities of health care for underserved areas, other factors also influence a physician's decision and ability to practice in such communities. These factors can be addressed in a training program, and such a program can prepare and encourage physicians to practice in such settings after residency training.

2. Although it has been argued that physicians trained in several other specialties may deliver primary care, our analysis will focus on the specialties that specifically prepare participants for the delivery of primary care: family practice, general internal medicine, and general pediatrics.

CURRENT STATUS OF THE PRIMARY CARE PHYSICIAN SUPPLY

Despite the rapid expansion and development of allopathic primary care

residency programs over the last two decades, there is a serious imbalance between the production of primary care physicians and those in other specialties.¹⁵ The number of active allopathic primary care physicians has grown no faster than the pool of all physicians.¹⁶ During the 1980s, about 33% of all active physicians were primary care physicians, declining slightly during the decade, from 33.0% in 1981 to 32.7% in 1986. This rate of growth is the product of a continued but slight decline in the representation of general/family physicians, from 13.5% in 1981 to 13.0% in 1986, coupled with a steady representation in general internal medicine (13.4% in 1981 and 1986) and general pediatrics (6.4% in 1981 and 6.2% in 1986).¹⁷

The rate of growth of the supply of allopathic primary care physicians has been considerably slower than the rate of growth of the pool of physicians trained in the subspecialties of internal medicine and pediatrics.¹⁸ The remarkable increase in subspecialty training since 1971 is reflected in forecasts of the supply of general internists vs subspecialists based on the differential in their growth rates. During the 20-year period from 1978 to 1998, the number of general internists is expected to increase by 77%, whereas the number of subspecialty internists is expected to increase by 206%.¹⁹

Osteopathic physicians account for 3.9% of all US physicians. (Because this represents such a small fraction of both the total and primary care physician pools, we will only address the allopathic physician specialty supply.) but they represent 9.3% of physicians in primary care. An increasing number of osteopathic physicians are also entering the non-primary care specialties.²⁰

Health Professions Shortage Area designations are often used as a barometer for assessing changes in the availability of primary care physicians. During the middle to late 1980s, improvement in the distribution of primary care physicians was reflected in the continued decline in the number of physicians needed to reduce the number of areas with shortages, from 4525 in 1984 to 4104 in 1988.²¹ However, this number has begun to climb for the first time in 10 years, and in 1990 it exceeded 4300.²² The prognosis for the primary care specialties led the Council on Graduate Medical Education to conclude that, if these trends continue, the number of physicians graduating from primary care graduate medical education programs will be considerably lower than projected by the Graduate Medical Education National Advisory Committee, and projections of undersupply may

be warranted.²

The most recent information provided to the Department of Health and Human Services by state governors indicates continuing shortages of primary care physicians throughout many areas of the country. Of the 35 states, commonwealths, and territories that responded to the Department of Health and Human Services about health manpower shortages, 49 (89%) cited general shortages of primary care physicians. Moreover, 45 (82%) also identified shortages of primary care physicians in rural areas.³

However, primary care physician supply as a proportion of the total supply of physicians is expected to remain constant. Forecasts by the Bureau of Health Professions reveal that the primary care physician supply will likely continue to grow at the same rate as the overall physician supply.⁴ These forecasts assume that the primary care specialties will continue to garner the same percentage of total first-year residency positions as was observed from 1986 through 1988.

The forecasts also assume that the fourth-year subspecialty selection rate for residents completing the third year of a general internal medicine or general pediatrics residency will remain constant. Despite an initial preference for general internal medicine, only about 40% of those who initiate such training become general internists. This figure reflects the pattern observed in the middle 1980s.⁵ However, data on the specialty preferences of today's students presented below portend a decline in the percentage of first-year residents in family practice and further erosion in the fraction of third-year primary care residents who select primary care careers.

DIMINISHING INTEREST IN PRIMARY CARE SPECIALTIES

Candidates to replenish the supply of primary care physicians are dwindling.

- The specialty preferences of US medical school seniors for a primary care career declined substantially during the 1980s. In 1981, 38.8% of the graduating class planned to become board certified in a primary care specialty, compared with 25.4% in 1989.⁶

- The proportion of medical school seniors planning to become board certified in general internal medicine dropped by more than 50%, from 12.7% in 1981 to 5.3% in 1989. Those planning to become board certified in family practice decreased from 17.3% to 13.7% during this period. General pediatrics showed a decline, from 8.8% to 6.4%.⁷

- Family practice fill rates for all

match participants declined from 85.2% in 1984 to 70.4% in 1989. Match rates for all match participants declined for internal medicine and pediatrics. Although the non-primary care specialties of anesthesiology, general surgery, and neurosurgery also experienced declining fill rates, obstetrics/gynecology and orthopedic surgery recorded increases in fill rates to levels approximating 100%.⁸

- The eventual fill rate of approved family practice positions by July rose to 90.9% from the 70% fill rate obtained by the end of match day in March. However, this 90.9% figure represented the fourth consecutive year that the family medicine fill rate declined, from 98.5% in 1985 (C. Tsou, MD, assistant director, Division of Education, American Academy of Family Physicians, written communication, April 1990).⁹

It is apparent that the primary care specialties may not be able to sustain their current share of the physician supply. Declines in preference for family practice coupled with greater preferences for the subspecialties of internal medicine and pediatrics will produce an erosion in the percentage of residents who ultimately complete primary care training.

Other factors, coupled with diminishing interest, may exacerbate the imbalance in primary care vs subspecialty physician supply:

- Over the next several years, comprehensively trained primary care physicians, particularly board-certified family physicians, will be intensively recruited by health maintenance organizations, private group practices, community health centers, and other employers of physicians. This demand will significantly exceed the current and predicted supply of new family physicians. For people in remote rural areas, family physicians are the only practical source of physician care.¹⁰

- Continued growth of the health maintenance organization sector, with preferential recruitment of family physicians to support highly "cost-dependent" systems and the ability of health maintenance organizations to offer attractive salaries, leisure time, and career advancement, will dramatically and negatively affect recruitment of primary care physicians to areas with physician shortages.¹¹

- Economic factors, particularly patient care reimbursement systems, uniquely affect primary care physician training programs. Teaching hospitals have found it increasingly difficult to sustain primary care residencies because they generate less revenue than inpatient-based, procedure-oriented residencies. Specialties that depend

heavily on ambulatory training, especially family practice programs, are the most adversely affected because they are dependent on internal and external subsidies, such as federal and state support. Whereas other specialties recover a significant percentage of their operating costs through patient billing, family practice residency programs on average barely recover 30% of costs.¹² Hospitals now meet an average of 81% of the costs of residency stipends from patient care income.¹³ Medical service income has become increasingly important to medical schools, growing from 12.2% of revenues in 1970 to 37.6% in 1987.¹⁴

- Specialty choices of graduates are correlated with specialty income potential.^{15,16} As long as primary care specialties are among the lower-paying specialties, they will find it difficult to attract future medical school graduates. Family physicians earn, on average, \$87,100 per year, compared with about \$193,000 per year for orthopedists.¹⁷ The customary, prevailing, and reasonable system of payment used under Medicare to reimburse physician services is now in the process of change to a resource-based relative value scale, which is anticipated to give increased value to the cognitive, nonprocedural services more often delivered by primary care physicians.¹⁸ Over a 5-year transition period, the fee schedule will play an increasing role in determining what physicians are paid, until all payments are based on the fee schedule in 1996.¹⁹ However, even with the changes in the fee schedule, large differences will remain between the annual salaries of primary care and specialty care physicians.²⁰

- University-based family medicine residency training programs are filling their positions at declining rates (D. L. H., R. M. P., and M. H. G., unpublished data, January 1990).

- Ambulatory management of the human immunodeficiency virus epidemic will place increasing demands on the supply of primary care physicians. As patients are diagnosed earlier, management in the ambulatory care setting becomes more appropriate. In addition, the aging of the population, the loss of obstetrical care in rural areas, and the rising tide of immigration will compete for the primary care physician's time.

FEDERAL ROLE IN THE TRAINING OF PRIMARY CARE PHYSICIANS

Federal health professions legislation of the 1960s was targeted at and was successful in increasing the overall supply of physicians. An underlying assumption in this legislation was that an increase in the aggregate physician pool

would include a concomitant increase in its generalist and primary care components. However, young physicians continued to turn to specialization in response to several factors, including the complexity of medical science, prestige of subspecialization, and anticipated income.

In response to the growing trend toward specialization, family practice was officially established in 1969 by the American Board of Medical Specialties as the 20th medical specialty. The Comprehensive Health Manpower Training Act of 1971 for the first time specified family medicine as a target for federal training grants. Despite this development and support, the output of family practice residency programs could not keep pace with rapid losses in the aging general practitioner population through the middle of the 1970s. It was not until 1980 that the general/family practice category recorded numerical increases. By 1988, this supply had barely reached the level of 70,000 recorded in 1965.⁸

Medical authorities concluded that, to reverse this trend, the proportion of medical students entering the primary care specialties of family medicine, general internal medicine, and general pediatrics should be 50%, a target that was later criticized by the Institute of Medicine as too low.⁹ The concern that this goal could not be reached without continued public sector support stimulated the passage of the Health Professions Education Assistance Act of 1976.

Since 1972, grants have been awarded annually to provide partial support to about half of the family medicine residency programs. The first award of \$5 million supported 52 of the 117 programs. By 1980, the number of family practice residency programs exceeded 380, residents numbered more than 6700, and awards totaled nearly \$30 million. However, in 1981 appropriations were cut significantly and by 1982 had fallen to a level of less than \$15 million, partially supporting about one fourth of the 388 existing residency programs. Since 1982, appropriations, not adjusted for inflation, have been relatively constant, and programs and residents have leveled at 384 and 7400, respectively. In real dollars, however, programs have received declining federal support. With the exception of the initial year of the program, funding in 1990 reached the lowest level in the program's 18-year history.¹⁰ Moreover, receipt of an average of \$100,000 per program amounts to about 10% of these programs' training costs.¹¹

Beginning in 1977, the federal government began to support primary care residency training programs not only in

family medicine but also in general internal medicine and general pediatrics. As was the case for family medicine, funding was cut severely in 1981, and there were no increases in overall funding levels throughout the 1980s.

FINANCING PRIMARY CARE RESIDENCY TRAINING

With the exception of family practice, most third- and fourth-year clinical medical education and residency training traditionally have taken place in hospital settings. Residency programs are financed primarily by third-party payments to the hospitals on a cost or charge basis. Hospital payments by private third-party payers for patient care include education costs.¹²

When Medicare's reimbursement procedure was changed from a retrospective, reasonable cost basis to a prospective payment method, an attempt was made to continue compensation for teaching hospitals through adjustments for salaries and benefits for residents and for other costs that were not fully covered in the new case classification system. For Medicare reimbursement, the hospital costs of graduate medical education were broadly categorized as direct and indirect. These categories amount to about \$4.7 billion per year. Direct costs are primarily salaries and benefits for residents, a portion of faculty salaries, and overhead allocated by the hospital.¹³ Among the factors included in the indirect cost adjustment are severity of illness of patients requiring specialized services provided by teaching institutions, the increased use of ancillary services, and the cost of maintaining the availability of state-of-the-art testing and treatment facilities.¹⁴ However, these adjustments do not include compensation for training outside the hospital setting.

During the last two decades and stimulated most recently by Medicare prospective payment reform in 1983, many patient care services for diagnosis and treatment have shifted from hospital to out-of-hospital settings. This change in service delivery has produced an increasing demand to shift more educational experiences to outpatient sites. However, there is no mechanism within the Medicare graduate medical education reimbursement system to compensate institutions for education costs incurred outside of the hospital setting.¹⁵

Moreover, the ambulatory care third-party reimbursement system tends to discourage graduate medical education in ambulatory settings. Ambulatory practices contribute relatively little to hospital revenues. Services typically provided in such settings, including pre-

vention and counseling, are not as well reimbursed as inpatient services. Payment levels are frequently lower for similar or identical services when provided in ambulatory settings. Patients also generally share a greater proportion of payments for services in ambulatory settings.

Federal grant funds are used as a primary source to initiate and improve ambulatory training. However, it is difficult for nominal federal grant support in the primary care arena to compete with the disincentives inherent in the Medicare graduate medical education reimbursement policy and the absence of sufficient revenues from ambulatory care third-party reimbursement.

INFLUENCE OF FEDERAL FUNDING AND COMMUNITY-BASED EDUCATION

It has been documented that physicians trained in federally funded programs are more likely to receive community-based training and, consequently, more likely to locate their practices in these areas.¹⁶ An analysis of the family medicine predoctoral training programs in the 126 allopathic medical schools in the nation revealed an important finding about the impact of federal funding on the propensity for undergraduates to choose family medicine residency training.¹⁷ Thirty-seven schools are considered "feeder" schools for family medicine because they send, on average, about 15% of their graduates to family practice residency programs. Of these schools, 23 (62%) require students to experience a family medicine clerkship in either their third or fourth year. These experiences are generally in ambulatory settings. In addition, 29 (78%) of the feeder schools received continuous federal support for predoctoral training in family medicine for 5 or more years, and an additional four schools received support for 3 years.

Fifteen schools had the least success in graduating physicians entering family medicine residency programs. On average, fewer than 5% of the graduates of these schools entered family practice residencies. Of these 15 schools, none had ever received a predoctoral training grant from the federal government, and none required a clerkship in family medicine.

Other studies demonstrate an association between community-based education and subsequent practice in similar settings.¹⁸

● Thirty percent of graduates of family practice programs are practicing in nonmetropolitan areas. Only 11% of physicians in other specialties are prac-

ticing in such areas.

- Students who take elective preceptorships are more likely to select a career in family practice and to practice in rural settings.

- Graduates of the primary care residency at the Montefiore inner-city residency program are more likely to practice in the inner city.

- Graduates of the University of Minnesota Rural Physician Associate Program, the Upper Peninsula Program of Michigan State University, and the Family Practice Residency Program at the University of Missouri-Columbia have higher rates of rural practice.

- The Washington/Alaska/Montana/Idaho program at the University of Washington has a rural focus, and its graduates are more likely to enter primary care and to practice in rural settings.

- North Carolina's Area Health Education Center Program has been successful in placing physicians in nonmetropolitan practices.

It appears that, without support for primary care ambulatory training experiences, the compelling financial incentives for students to enter other specialties will produce an even more rapid erosion in the number of students choosing primary care careers, impeding care for the underserved.

RECOMMENDATIONS

The following seven recommendations constitute a framework for long-term planning that is designed to (1) address the eroding primary care education infrastructure, through programs that promote enhanced recruitment, training, and retention of future physicians who are more likely to provide primary care and more likely to practice in underserved areas, and (2) produce an adequate supply of primary care physicians to practice in the most severely underserved areas, through programs that promote commitments to the NHSC and other service commitment programs.

1. Use the NHSC scholarship and loan repayment programs for the underserved areas that are hardest to staff. The NHSC plays an essential role in meeting long-term expectations to provide primary care physicians to underserved areas. The NHSC anticipates significant increases in the number of loan repayment agreements to support capacity expansion, and NHSC scholarships will eventually result in significantly higher numbers of primary care physicians available for placement in underserved areas. A service commitment component of a long-term plan

is the most immediate means of moving primary care physicians into the most severely underserved areas.

2. Build postgraduate training and service linkages. Schools of medicine and community and migrant health centers and other sites for the delivery of primary care services need to work together to incorporate ambulatory training experiences in primary care education. Most academic institutions and ambulatory service delivery sites in underserved areas have not engaged in such linkages. Therefore, federal as well as state, local, and private support for primary care medical education should provide financial incentives that encourage institutions to work with appropriate entities providing primary care services for the underserved to incorporate ambulatory training experiences at those sites into the educational curriculum.

3. Redirect admissions criteria to students who are more likely to choose primary care careers and serve the underserved. Evidence indicates that the profiles of those entering medical school can have an effect on the numbers serving the underserved.¹⁰ Multiple studies demonstrate that physicians from rural backgrounds are more likely to select family practice as a specialty and to practice in rural settings.¹¹ The underrepresentation of persons from racial/ethnic minorities among medical students and practicing graduates of U.S. medical schools has been a concern for the past two decades. Admissions policies and inadequate or inappropriate secondary level preparation that leads to relatively high attrition after matriculation have been cited as causes of this persistent inequity. Admissions criteria should be redirected to include preference for students who will have a propensity to select a primary care specialty and rural practice—students from rural areas^{12,13} and minorities.¹⁴

4. Promote required third-year undergraduate medical clerkships in primary care. Students report their decision to specialize during their third year of undergraduate medical education.¹⁵ Studies show that preference for a career in family practice drops during the 4 years of medical school, while interest in the subspecialties increases dramatically. Curriculum time, number of faculty, perceived importance of the specialty, and presence of role models are among the institutional factors that influence career selection during undergraduate medical education.¹⁶ Therefore, it is essential that students be exposed to primary care practice in the ambulatory setting during the third year, before a career decision has been

made.¹⁷ Federal as well as state, local, and private support for undergraduate medical education should be given preferentially to schools that require a third-year rotation in a primary care ambulatory setting.

5. Promote primary care research. To establish primary care as a scientific discipline, research activities in clinical patient care, primary care education, and health services research should be an integral part of the medical school research agenda. Federal, state, local, and private sources of funding for research conducted in medical schools and teaching hospitals should preferentially support the development of a coherent primary care research agenda. Medical effectiveness outcome research should continue to focus on primary care procedures and interventions to establish their efficacy and efficiency.

6. Train and develop community-based faculty. Curricular objectives and content in undergraduate medical education are determined by the faculty of each medical school. Few faculties have addressed the need for a balanced specialty and geographic distribution of physicians.¹⁸ Faculty in the academic setting, with their focus on advanced tertiary care, are uncertain or skeptical about the purposes of community-based education. They may perceive the quality of care and the quality of teaching at the academic center to be better than in the community. For primary care to flourish in medical education, serious efforts must be made to develop faculty with a commitment to changing the milieu of medical schools. Attracting students with a propensity for primary care, such as minority students, will require the development of minority faculty role models. In fact, curriculum change, service linkages, changes in admissions criteria, and even fiscal change will have to be preceded by faculty development. In their desire for quick fixes and solutions now, policymakers often overlook the first step—faculty development. Federal, state, and local support for primary care medical education should include programs for community-based faculty development.

7. Establish graduate medical education financing initiatives for primary care training. Although patient care delivery has shifted in the direction of outpatient settings, Medicare reimbursement for training does not provide sufficient incentives to support a shift in primary care training into those settings. Experts agree that the inpatient setting is no longer by itself an appropriate environment to train primary care physicians. Incentives must be developed for graduate medical education fi-

nancing to increase the amount of time primary care residents spend in ambulatory settings and to increase the number of training sites that resemble practice conditions likely to be experienced by primary care physicians in the future.

Medicare reimbursement funds should be used:

- To reward institutions that expand opportunities for primary care training. Direct and indirect medical education adjustments should provide incentives for institutions to develop service-education linkages and to reimburse resident training at outside sites.
- To provide individual incentives for medical school graduates to select careers in primary care. Direct and indirect medical education adjustments should be allocated to medical school graduates who select primary care careers. Resident bonuses, interest forgiveness, and loan forgiveness are among the substantial incentives that should be used to assist graduates with their looming indebtedness if they select primary care training and eventually practice in underserved areas.
- To support research and demonstration initiatives in primary care training. Support should be given through an allocation of Medicare graduate medical education reimbursement to a national pilot study of institutions and residents to test the efficacy of institutional rewards and individual resident incentives in support of primary care.

CONCLUSION

In the final analysis, unless there are substantial health improvements in certain populations that historically have been disadvantaged economically, educationally, and politically, not much progress will be made in the nation's overall health profile. Many Americans lack access to essential primary care. Among the barriers to access is the low number of primary care physicians. Although reversing the trend in specialty selection of medical students encompasses many factors, education is one part of the solution.⁶ Strategies for improving primary care education must include changes in admission criteria, promote service-linked training, restructure the clerkship required in the third year of medical school, develop faculty to alter the educational milieu, and provide incentives for graduate medical education financing of primary care. All entities that underwrite medical education should accept the responsibility to assist in improving the health of the underserved and to ensure access to primary care physicians.

References

1. Healthy People 2000: National Health Promotion and Disease Prevention Objectives. Washington, DC: US Public Health Service; 1990.
2. Mullis J. The Graduate Education of Physicians: Report of the Ciba Foundation Commission on Graduate Medical Education. Chicago, Ill: American Medical Association; 1966.
3. Mullis F. The National Health Services Corps and health personnel innovations beyond post-graduate medicine. In: Sidel VW, Sidel R, eds. *Reforming Medicine: Lessons of the Last Quarter Century*. New York, NY: Pantheon Books; 1984.
4. Sartelli A. *The US Experiment in Social Medicine: The Community Health Center Program, 1965-1986*. Pittsburgh, Pa: University of Pittsburgh Press; 1986.
5. *Evaluation of the Impact of the National Area Health Education Center Program*. Rockville, Md: Health Resources and Services Administration; 1990. Final Report Contract No. HRSA-240-85-0031.
6. *Proposed Strategies for Fulfiling Primary Care Manpower Needs*. Rockville, Md: National Health Service Corps; 1990.
7. Rosenblatt RE, Jackson TC. In support of a linkage between the funding of graduate medical education and care of the indigent. *N Engl J Med*. 1989;321:92-95.
8. *Circle in Physician Recruitment and Retention Patterns in Community and Migrant Health Centers Related to Training*. Rockville, Md: Health Resources and Services Administration; 1988. Final Report Contract No. HRSA-240-87-0067.
9. *Evaluation of the National Health Service Corps Physician Placements Upon Medical Care Delivery in Rural Areas*. Washington, DC: US Dept of Health and Human Services; 1982. Publication DHPA-15-82-12.
10. *HRSA's Long Range Action Plan: Report on Access to Primary Care for All*. Rockville, Md: Health Resources and Services Administration; 1989.
11. Noble J, Starfield B, Friedman R. *Assessment of the Environment and Support of Primary Care Residency Training: General Internal Medicine and Pediatrics*. Washington, DC: US Dept of Health and Human Services; 1987. Publication NTHR-HP-87-0161.
12. Shulov SP, Alpert JJ, Rayman I, Sernas JH, Fein M, Brufford J. Federally supported primary care training program and pediatric careers. *AJDC*. 1987;141:65-68.
13. *Sixth Report to the President and Congress on the Status of Health Personnel in the United States*. Washington, DC: US Dept of Health and Human Services; 1988. Publication HRS-P-OD-88-1.
14. Colwell J. Primary care education: a shortage of positions and applicants. *Fam Med* July/August 1989;20:450-454.
15. AAMC. *Issue Brief*. Washington, DC: Association of American Medical Colleges; 1991.
16. *Report of the Secretary's Task Force on Black and Minority Health*. Washington, DC: US Dept of Health and Human Services; 1987. Publication DPH-174-719.
17. Rosenblatt R, Lachner D. Shortage or shortage? unraveling the physician manpower conundrum. *West J Med*. 1991;154:43-50.
18. Hauff R, White C. Support of Graduate Medical Education. Washington, DC: Physician Payment Review Commission; 1989.
19. *Seventh Report to the President and Congress on the Status of Health Personnel in the United States*. Washington, DC: US Dept of Health and Human Services; 1990. Publication HRS-P-10-89-1.
20. *Physician Characteristics and Distribution in the United States 1980 and 1987 editions*. Chicago, Ill: American Medical Association; 1983 and 1988.
21. Klarer P, Schleimer M, Turtin A. Changes in the supply of internists: the internal medicine population from 1970 to 1988. *Ann Intern Med*. 1987;107:683-689.
22. Barnett PG, Minkling JE. Public policy and the supply of primary care physicians. *JAMA*. 1989;262:2564-2568.
23. *Council on Graduate Medical Education: First Report of the Council*. Washington, DC: US Dept of Health and Human Services; 1983;1:2.
24. *Status Assessment of Health Personnel: Shortages, Issues, and Concerns*. Washington, DC: US Dept of Health and Human Services; 1990. Publication HRS-P-OD-90-4.
25. *NRMP Data March 1990*. Evanston, Ill: National Resident Matching Program; 1990.
26. Chappel J, Casanovi M, Harris D, Denton D. Survey of obstetric malpractice in Western frontier areas. *Fam Med* May-June 1990;22:225-227.
27. Babin M, Burnett W, Berringer B. A comprehensive manpower strategy for the Public Health Service: a working document. In: *Proposed Strategies for Fulfiling Primary Care Manpower Needs*. Rockville, Md: National Health Service Corps; 1990. appendix A.
28. Colwell J. Barriers to an enhanced linkage between education and service delivery of primary care: education of physicians to improve access to care for the underserved. In: *Proceedings of the Second Health Resources and Services Administration Primary Care Conference*, March 21-23, 1990. Columbia, Md: pp 219-225.
29. *Teach J. COTY Survey of Housestaff Stipends, Benefits, and Paying*. 1984. Washington, DC: Association of American Medical Colleges; 1986.
30. Ebell MH. Choice of specialty: it's money that matters in the USA. *JAMA*. 1990;263:1630.
31. Shulov DJ. Choice of specialty: it's money that matters in the USA. *JAMA*. 1990;263:1630.
32. Haas WC, Braun P, Dunn D, Becker ER. Resource-based relative values: an overview. *JAMA*. 1989;260:2347-2353.
33. Ginzburg P, Lalley L, Hammond G. Update: Medicare physician payment reform. *Health Aff* Spring 1990;9:178-186.
34. Reinhardt U. Changing paths and places for training tomorrow's generalists. In: *Clinical Education and the Decline of Postgraduate*. New York, NY: New York Academy of Medicine; 1989:101-107.
35. *A Manpower Policy for Primary Health Care*. Washington, DC: Institute of Medicine, National Academy of Sciences; 1979.
36. Mullis F. Smith J. Primary care service and training programs in retrospect: funding trends, 1965-1986. In: *Primary Care Medical Education: Proceedings of the Health Resources and Services Administration Conference*, March 28-31, 1988. Hunt Valley, Md.
37. Politzer R, Harris D. *Trends in Primary Care Physician Training: A White Paper*. Rockville, Md: Health Resources and Services Administration; 1990.
38. *Impact of Federal Support on Family Practice Residency Training*. Rockville, Md: Health Resources and Services Administration; 1986. Final Report Contract No. HRSA-240-83-0073.
39. *Hearings Before the Subcommittee on Health of the House Committee on Ways and Means*, 101st Cong, 1st Sess (1990) (testimony of J. Buchanan, Association of American Medical Colleges).
40. Harris D, Coleman M, Mullis M. Impact of participation in a family practice track program on student career decisions. *J Med Educ*. 1982;57:608-614.
41. Rabinowitz H. Evaluation of a selective medical school admissions policy to increase the number of family physicians in rural and underserved areas. *N Engl J Med*. 1990;321:640-646.
42. Haas R, Harris D. Characteristics of medical school applicants: implications for rural health care. *J Fam Med* May-June 1989;21:187-190.
43. 1990 AAMC Graduation Questionnaire. Washington, DC: Association of American Medical Colleges; 1990.
44. Rabinowitz H. The relationship between medical student career choice and a required third-year family practice clerkship. *J Fam Med* March-April 1988;20:118-121.
45. *Supporting Physicians for Public Needs: Report of the Task Force on Physician Supply*. Washington, DC: Association of American Medical Colleges; 1990.

Changing the Medical School Curriculum to Improve Patient Access to Primary Care

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The problems of access to health care by the underserved demand a systematic response. One of the critical components of that response is medical curriculum reform, with the intent to graduate adequate numbers of physicians to do primary care, to work with the underserved and the uninsured, and to practice in rural areas. One state, Minnesota, has developed a unique response to these needs, demonstrating problem solving very much in keeping with many of the recommendations in the literature. Highlighted in this article is the University of Minnesota's Rural Physician Associate Program, a predoctoral curriculum innovation functioning for 20 years to help resolve the issue of physician maldistribution in the state. The Rural Physician Associate Program provides students with many of the skills needed to provide primary care, it is cost-effective, and it has brought a number of benefits to the participating communities.

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THE ISSUE of access to health care comprises two major themes: one is the distribution and availability of health services; the other is the ability to pay for those services when they are available. Many people have difficulty because of their inability to pay; many, particularly in rural areas, have difficulty because of the disproportionate distribution of services. Neither theme can be considered in isolation. Both are closely linked to the availability of primary medical care services and to the medical educational system, which must respond to the public need.¹

Primary care has been underemphasized in the United States. For example, in 1986, only 14.2% of patient care physicians in the United States were in family or general practice, ranging from 6.1% in Massachusetts to 27.2% in Minnesota.² At the same time, at least 5% of American physicians listed some kind of surgery as their specialty.³ No other industrialized nation in the West tolerates such allocation of specialists.⁴ Compounding this problem, commitment to primary care practice—family medicine, general internal medicine, and general pediatrics—has declined steadily, from 37.3% in 1961 to 23.6% in 1989, when 2100 fewer graduates

sought careers in primary care.⁵ A February 1990 meeting of nine American medical societies (including the American Medical Association, Association of American Medical Colleges, American Academy of Family Physicians, American College of Physicians, American Academy of Pediatrics, Society of Teachers of Family Medicine, and four others) concluded, "More than any other cause, the medical education environment may delay the choice by students of primary care specialties . . . an environment in which too few students can conceive of a role for generalist physicians."⁶

Others articulate similar messages. Freymann⁷ notes that the shift from hospital-oriented to community-based health services and a changing public paradigm of health care will shape medical education; ie, primary care physicians will be the key medical personnel, and the curriculum will have to prepare physicians to function in this new health care system. A consortium of primary care organizations is currently attempting to design such a relevant curriculum.⁸ Schroeder et al⁹ state that public funding will have to be redirected to facilitate changes in medical education, patient care, and research to make them more responsive to the public's needs. Similar conclusions have been reached by others.¹⁰ It is of interest to note that a 1925 report from the Commission on Medical Education of the Association of American Medical Colleges¹¹ and the 1984 report of the Association of American Medical Colleges' Project Panel on the General Professional Education of

the Physician¹² drew some similar conclusions.

The medical education system changed radically after 1910, with the Flexner report.¹³ Although, as Starr¹⁴ points out, such global change was not the original intent, it has been quite difficult to alter the system to deal with the problem of access.^{15,16} Despite a half century of radical changes in medical practice, the teaching and learning process for medical students remains much the same, and it may well be that the authority for real change will have to come from outside the institution.¹⁷⁻²⁰

MINNESOTA RURAL PHYSICIAN ASSOCIATE PROGRAM (RPAP)

An example of appropriate medical curriculum response to external pressure is the Minnesota RPAP, now entering its 20th year of operation. The remainder of this article will focus on this unique curriculum and on its outcomes.

History

In 1969, the Minnesota Academy of Family Physicians was deeply concerned about the severe attrition rates among family physicians, particularly in rural areas. The estimated shortage of rural physicians was 500 to 700 for 1970, with substantial worsening of the situation projected for the next decade.

In April 1970, the leadership of the Minnesota state legislature requested a meeting with the administration and a substantial number of the faculty of the University of Minnesota Medical School. The clear message from the chairman of the House Appropriations Committee was that the medical school must develop, over the next 2 years, a program specifically designed to redistribute physicians into the underserved rural areas of the state; the alternative was withdrawal of state funding, 27% of the budget at the time.

The chairmen of the clinical departments formed a committee to develop a response. An initial outcome was the formation of the Department of Family Practice and Community Health. In September 1971, the committee's efforts culminated in the development of the RPAP, "to create the right kind of

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Table 1.—Summative Comments Concerning 60 RPAP* Graduates by Family Practice Residency Directors for the US North Central Region

Best residents during flight
Self-confident and able to direct
Ahead of their peers by 6 to 12 months in understanding of general medical concepts, such as clinical data gathering, assessment, and plan development
Able to start from day 1 in outpatient and in-hospital care
Surgical and obstetrical skills better than those of peers
Know how to care for patients at both ends of the age spectrum simultaneously
Personality more comfortable with uncertainty and willing to deal with it over a long period of time
Know more clearly their future goals and what they want from their training

*Rural Physician Associate Program students

physician for the right place."

Despite pockets of resistance from within the medical school, the RPAP has been sustained by a number of important constituencies. More than 500 practicing rural physicians who have been involved with the program constitute a strong and vocal support group. Directors of family practice residency programs are clear about the program's impact on the skills, confidence, and experience of RPAP students (Table 1). The Minnesota Medical and Hospital Associations and the Minnesota Academy of Family Physicians have consistently backed the program. Academic input and support have been provided by more than 100 specialty faculty from the medical school. Some funding has been provided by the University of Minnesota Hospital. Finally, the state legislature has maintained and steadily increased its financial support, due in large part to the positive effects of the program on physician distribution.

Description of the RPAP

The RPAP represents a major departure from the traditional medical school curriculum. Although it has been described in detail elsewhere,² the unique aspects of the program are highlighted below.

The Basic Concept.—The RPAP is a third-year experience 9 months in duration during which the student studies with carefully selected preceptors in community settings. A 3-month extension is possible but is requested in only 10% of cases.

The program has been accredited three times by the Liaison Committee on Medical Education, which cited it in 1990 as one of eight major strong points of the medical school. The curriculum is largely problem based and self-directed, with few lectures. In 1989, 77% of all learning activities took place in ambulatory settings, 23% in hospitals. In contrast, 85% of patient encounters for non-RPAP third-year medical students occur in tertiary care settings.

Interaction With Traditional Curriculum.—The program grants 6

Table 2.—Comparison Between Nonmetropolitan Counties, Metropolitan Counties, and the State as a Whole (January 1991)

	78 Nonmetropolitan Counties*	7 Metropolitan Counties	State of Minnesota
Average population per physician	1213	371	502
Average income, \$	6467	11 100	11 186
% below poverty line	13.0	6.4	10.0
% unemployed	7.4	5.2	5.3
% with high school diploma	63.6	75.1	73.1
% with college degree	11.0	17.5	17.4

*Rural Physician Associate Program students have served in 53 of these counties.

months of formal curriculum credit. Students return to the campus for their fourth year and graduate with their peers. The RPAP students can opt out of two of three required clerkships—ambulatory medicine, pediatrics, and surgery—if board-certified physicians in those disciplines are available at the preceptorship site and are approved by the appropriate department chairman.

Basic Prerequisites.—There must be an accredited hospital, the community must accept the principles of the program, and there must be a balanced patient population. Students must complete 6 weeks of inpatient clinical clerkships in internal medicine and obstetrics and gynecology and must pass part I of the National Board of Medical Examiners³ before starting the experience.

Special Courses and Activities.—Several additional learning activities are required as part of the experience: (1) a minimum of five videotaped patient encounters, which are reviewed in detail⁴; (2) 82 self-directed modules on medical interviewing and behavioral medicine; (3) an end-of-experience summary of 1000 words or more; (4) a minimum of 2 hours per day spent reading, focused on problems encountered; (5) advanced cardiac life support (ACLS) and basic trauma life support (BTLIS) certification; (6) "Introduction to Psychiatry and Chemical Dependency Issues in Rural Practice," a 5-day class; and (7) full-day specialty faculty visits to communities for medicine, pediatrics, obstetrics and gynecology, and surgery specialties. These visits, in groups of three to five students, include case presentations by the students and specialty consulting to the preceptors for problem patients.

Selection and Preparation of Students.—The RPAP is a voluntary program, with a quota of approximately 30 of 228 students in each third-year class. Students apply in the second year and are screened for academic ability, maturity, potential to return to rural practice, independence, learning style, goals, some interest in research, and preference for location. The program is usually oversubscribed.

Evaluations.—These are based on feedback from the preceptor, 50%; RPAP faculty, 30%; and visiting university faculty, 20%. There are no formal examinations, but RPAP students must pass parts I and II of the National Boards to graduate.

Use of Microcomputers.—Since 1984, microcomputers have been used at all sites for literature searches for both the students and other helping professionals in the RPAP community, for facilitating referrals, and for communicating with the RPAP office. Students are expected to become computer literate, and they receive instruction in Minneapolis before going to their communities; location visits by staff from the university hospitals are provided when needed.

Faculty.—All preceptors and teaching sites are carefully selected. All of the primary preceptors are board certified; there must be two or more practicing together, and they must be associated with an accredited hospital. Currently, 80% of all RPAP students are being taught by former RPAP students; within a decade, it is expected to be 100%.

Each preceptorship site receives seven or more visits per year from a combination of RPAP and specialty faculty. If the preceptor is present when the specialty faculty make their daylong visits for case presentations and discussions, free consultations are provided, plus continuing medical education credit in their own consultation rooms.

Outcomes

The RPAP has met the expectations of its various constituencies. Its outcomes are also close to the expectations of many of the medical educators cited in the literature.^{1,2,5,6,8} It has addressed concerns about rural physician attrition, access to basic health care, and career selection into the primary care disciplines.

By 1985, the RPAP had been instrumental in providing an acceptable ratio (1:2500) of primary care physicians, mainly family physicians, for all 87 counties in Minnesota.⁶ In a 1989 report, Krulewski⁸ noted that nearly 70% of

Table 3.—Specialty Selection of 157 RPAP* Graduates in Practice in the United States

Specialty	No. (%)
Family practice	280 (83.1)
General internal medicine	43 (12.4)
General surgery	18 (5.3)
Psychiatry	10 (2.9)
Osteopathic podiatry	6 (1.7)
Pediatrics/neonatology	4 (1.1)
Medical subspecialties	4 (1.1)
Surgical subspecialties	20 (5.8)
Emergency medicine	18 (5.3)
Other	45 (13.0)
Total	487 (100.0)

*RPAP indicates Rural Physician Associate Program.

Table 4.—Practice Location of 284 RPAP* Graduates Practicing in Minnesota

Location	No. (%)
Rural	167 (58.8)
Urban	117 (41.2)
Total	284 (100.0)

Community Size	No. (%)	Cumulative %
<5000	70 (24.7)	24.7
5000-10,000	38 (13.4)	38.1
10,000-15,000	48 (16.9)	55.0
15,000-25,000	36 (12.4)	67.4
25,000-50,000	21 (7.4)	74.8
50,000-100,000	20 (7.0)	81.8
100,000-500,000	41 (14.4)	100.0

*RPAP indicates Rural Physician Associate Program.

Table 5.—National Board Scores for RPAP* and Non-RPAP Students From 1984 Through 1987†

	Average Score	
	RPAP Students	Non-RPAP Students
Part I	513	527
Part II	522	511

*RPAP indicates Rural Physician Associate Program.
†The average class size was 280.

farm families in southwest Minnesota were within 10 miles of a physician or clinic and that only 1% had to travel more than 30 miles for primary medical care.

The RPAP experiences occur primarily in rural settings, often in disadvantaged counties. The mean RPAP community size is 5960, and 86% have populations of 12,000 or less. In 1989-1990, 21 of 23 RPAP communities were located in counties with a per capita income less than the state average, and 19 of 23 were in counties with unemployment rates greater than the state average. The average population-physician ratio for January 1991 was 1213:1 for the 76 nonmetropolitan counties (Table 2).

A notable effect of the program has been on the distribution and specialty selection of its graduates. Of 457 graduates in practice throughout the United States in January 1991, 74% had chosen primary care, 64% had chosen family practice, and the remainder had chosen a mix of other specialties (Table 3). Of 284 remaining in Minnesota, 88.6% were in primary care, 71% in family practice; 58.8% were in rural areas; and

Table 6.—Self-confidence for Certain Skills for RPAP* Students Compared With Non-RPAP Students†

Skills Area	No. of Items		
	Significant Gain in Self-confidence (RPAP Students)	No Significant Gain in Self-confidence (Both Groups)	No Significant Gain in Self-confidence (Non-RPAP Students)
Biological (behavioral)	28	3	0
Behavioral	4	14	0
Related professional	3	4	0

*RPAP indicates Rural Physician Associate Program.

†Measured by permission of Colored University Press from the *International Journal of Family Practice* (1982;3:155), and by permission of Minnesota Medicine (May 1982:296).
‡P < .05 for all significant gains in self-confidence.

Table 7.—Appropriateness of Instruction Time as Rated by RPAP* and Non-RPAP Students for 1981 Through 1988

Area	RPAP Students	% Responding "Appropriate" to the Questions, "Do You Believe that the Time Devoted to Your Instruction in the Following Areas Was Excessive, Appropriate, or Inadequate?"		P†
		AS University of Minnesota Students		
Biological/science information	73.5	67.9	.05	
Research techniques	50.0	26.5	.01	
Diagnostic skills	80.0	72.4	.145	
Therapeutic management	70.1	66.9	.145	
Patient management	68.1	48.7	.01	
Care of ambulatory patients	79.8	64.8	.001	
Public health and community medicine	37.6	30.3	.10	
Use of computers (1984-1988)	31.6	19.3	.001	

*RPAP indicates Rural Physician Associate Program.

†Question 28 from the Graduation Questionnaire of the Association of American Medical Colleges.

§NS indicates not significant.

68% were practicing in communities of 25,000 or fewer people (Table 4). In contrast, only 51% of non-RPAP students were practicing in Minnesota, and only 18% of those were practicing in rural areas.

There have also been tangible benefits for the RPAP students. Since the mid-1980s, their National Board of Medical Examiners II test scores have been better than those of their peers, and they demonstrate greater improvement in scores from part I to part II (Table 5). Their self-confidence is significantly better on 26 of 29 biological treatment skills, four of 18 behavioral skills, and three of seven professional skills (Table 6). They more often think that their instruction time in a number of areas is appropriate (Table 7). They do well in the National Resident Matching Program (Table 8). Finally, they are significantly more confident with respect to career choice ($P < .001$) than are non-RPAP students.

An unexpected benefit for the University of Minnesota Hospital is that referral rates from RPAP communities have increased more than threefold; in 1983, over 15% of all physician referrals to the hospital came from RPAP preceptors and former students. This was responsible, in part, for the hospital's decision to fund the microcomputer system for the program.

% Responding "Appropriate" to the Question, "Do You Believe That the Time Devoted to Your Instruction in the Following Areas Was Excessive, Appropriate, or Inadequate?"

Table 8.—National Residency Matching Program Results for 23 RPAP* Students and 177 Classmates in 1989

Choice	RPAP Students, %	Non-RPAP Students, %
First	78.3	81.9
Second	13.0	13.8
Third	4.3	7.4
Fourth	4.4	4.2
Fifth, or no match	0.0	12.7
Total	100.0	100.0

*RPAP indicates Rural Physician Associate Program.

Cost-effectiveness of RPAP

The RPAP is an inexpensive innovation in medical education. It appears as a line item in the Minnesota state budget; an average of more than 32 students per year have been served at a cost comparable to that of a non-RPAP student. This cost includes a nontaxable \$9000 state stipend for the first 6 months, but not a \$3000 stipend paid by the preceptor for the last 3 months; none of the stipends carries any obligation for the students.

The program would be impossible without the voluntary input of community-based faculty, who have made economic contributions over and above the stipends provided to the students; the amount of those stipends alone is now well over \$2 000 000. Preceptors receive no payment for their teaching; they assume full legal responsibility for the ac-

tions of students. Students have an average of 30 contact hours per week with preceptors; they use the preceptor's office and the local hospital facilities free of charge to them or to the medical school.

COMMENT

The background characteristics of physicians that motivate them to select rural primary care vs other careers have been examined in detail elsewhere.⁸⁻¹⁰ Ernst and Yett⁸ conclude that "physicians have high propensities to settle in areas with which they have had prior personal contact." Clearly, we cannot expect medical graduates to practice primary care in rural settings if we do not also expose them to those models and settings.

Real curriculum change does have an impact on students' career choices and, in particular, on their tendency to select primary care careers in rural settings. This has been well demonstrated by the decentralized Washington/Alaska/Montana/Idaho program at the University of Washington,¹¹ by the University of New Mexico,¹² and by the Upper Peninsula Program at Michigan State University.¹³

Of 182 RPAP students who responded to a recent survey, 70% felt that their physician preceptor was a positive influence in helping them choose a rural practice, 87% stated that the RPAP influenced their choice for a rural practice, and 97% reported that they would repeat the RPAP experience.

The RPAP of the University of Minnesota Medical School has demonstrated its worth to the state, especially by successfully addressing the issue of physician redistribution. The primary care physician-population ratio is the best in the nation, with 33 family physicians in patient care per 100 000 population.¹⁴ Rural citizens have excellent access to primary care.¹⁵ The RPAP students learn in environments that serve the underserved and uninsured. The RPAP graduates return in large numbers to rural communities and continue to meet those needs. In recognition of the success of the RPAP, the Minnesota state legislature recently (1990) increased the budgetary line for the program by \$200 000 (30%) and requested that the number of students be increased to 40 per year. The medical school has also recognized its worth and intends to make it one of its showcase programs.

The RPAP demonstrates the vital importance of effective partnerships in effecting curriculum change, as recommended by Engel.¹⁶ The partners in this enterprise include the medical school, the state legislature, medical organizations, and many communities and physi-

cians around the state. The RPAP is a cost-effective response to the need for alternate-track ambulatory training settings.^{17,18} It has focused on areas of learning now considered essential for the preparation of the physician of the 21st century.¹⁹ The program has been made possible by the impact of external forces—the state legislature—and by a small redirection of the substantial public funding going to medical education, approaches recommended by a number of authors.^{17,18} Finally, the RPAP is a response to the crisis of access—both availability of primary health care services and ability to pay—in rural areas. By sharing responsibility, the needs of the underserved can be met, particularly when there is an adequate supply of primary care physicians.

Serious thought is being given to placing residents in family practice, internal medicine, and pediatrics in RPAP sites for periods of 3 months or longer. Such a development will only strengthen the impact of the RPAP on practice site selection, in keeping with the observations of Brazeau et al.,²⁰ Mason,²¹ and others.

The Vice-President of the Health Sciences at the University of Minnesota recently suggested that an urban physician associate program be developed for the indigent portions of the Minneapolis-St Paul area. The RPAP staff have encouraged and cooperated in the development of this effort, under consideration by the Medical School and Health Sciences at Minnesota.

Although the Minnesota Rural Physician Associate Program or programs like it cannot be construed as the only answer to the problem of access, there is little question that this curriculum innovation has allowed the state of Minnesota to address one of the major causative factors—maldistribution of the graduates of the Minnesota medical schools. This type of program may be of benefit to medical schools in other states throughout the nation. Far too few programs of this kind, aimed at directing medical students into primary care careers and toward the needs of the underserved, currently exist. There is an urgent need to develop many more cooperative partnerships among medical schools, their communities, and legislative bodies, both state and federal. These coalitions can provide the momentum to implement more programs like the RPAP. Strong leadership will be needed from within medical schools and from other interest groups to bring about future growth in the primary care specialties.

References

- Schneider SA, Jones JS. Showback JA. Academic medicine as a public trust. *JAMA*.

- 1989;262:803-812.
2. Current Population Reports. Washington, DC: US Bureau of Census, 1986. Series P25, No. 797.
3. Benjamin W. Will centrifugal forces destroy the medical profession? *N Engl J Med*. 1989;321:1191-1192.
4. Medical education may deter grads from choosing primary care careers. *AAJMC Weekly Rep*. March 15, 1990;4:1.
5. Freymann JG. The public health care paradigm in shifting medicine must swing with it. *JGIM Intern Med*. 1989;4:313-319.
6. Primary care organizational consortium holds 1st annual meeting. *JAMC Weekly Rep*. December 21, 1989;4:2.
7. The reform of medical education. *Health Aff* 1989;7(suppl):1-192.
8. Clinical education and the doctor of tomorrow. In: Gaetel B, Rogers DE, eds. *Proceedings of the Josiah Macy, Jr. Foundation National Seminar on Medical Education: Adapting Clinical Medical Education to the Needs of Today and Tomorrow*. New York, NY: The New York Academy of Medicine, 1989.
9. Hagopian WC. Medical Education. Final Report of the Commission on Medical Education. Association of American Medical Colleges: 1992.
10. Project Panel on the General Professional Education of the Physician and College Preparation for Medicine. Physicians for the 21st century. *J Med Educ*. November 1986;61:2139-2140.
11. Fleener A. Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching. Mass: Carnegie Foundation for the Advancement of Teaching, 1910. Bulletin 4.
12. Starr P. The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry. New York, NY: Basic Books Inc. 1982.
13. Rison SW. Structure and ideology in medical education: an analysis of resistance to change. *J Health Soc Behav*. 1989;29:294-306.
14. Engel CE. Changes in medical education. *Ann Community Oriented Educ*. 1989;2:55-101.
15. Mennin S, Kaufman A. The change process and medical education. *Ann Community Orient Educ*. 1989;2:101-110.
16. Verby JE. The Minnesota Rural Physician Associate Program for medical students. *J Med Educ*. 1988;63:427-437.
17. Verby JE. The audiovisual interview: a new tool in medical education. *JAMA*. 1979;238:2413-2414.
18. Verby JE. Physician redistribution: a worldwide medical problem. *Fam Pract*. 1983;2:151-156.
19. Krausman J. Health Insurance, Coverage and the Use of Health Services by Farm Families in Minnesota. Minneapolis, MN: University of Minnesota, 1985.
20. Ernst RL, Yett DE. Physicians' background characteristics and their career choices: a review of the literature. *Med Care Res*. 1984;4:11-36.
21. Cullison S, Reed C, Cullison JM. Medical school admissions, specialty selection, and distribution of physicians. *JAMA*. 1976;235:502-505.
22. Head RE, Harris DE. Characteristics of medical school applicants: implications for rural health care. *Fam Med*. 1989;21:187-190.
23. Atkins RJ, Anderson GR, Cullen TJ, Myers WW, Newman ES, Schwartz MR. Geographic and specialty distributions of WAMI program participants and nonparticipants. *J Med Educ*. 1987;62:810-817.
24. Kaufman A, Mennin S, Waterman R, et al. The New Mexico experiment: educational innovation and institutional change. *Acad Med*. 1989;64:285-294.
25. Brazeau NK, Pette MJ, Hochner JM. The Upper Peninsula Program: a successful model for increasing primary care physicians in rural areas. *Fam Med*. 1989;21:550-553.
26. Mason HR. Medical school, residency and eventual practice location: toward a rationale for state intervention. *JAMA*. 1975;233:48-52.

Item 7

UNIVERSITY OF
ROCHESTER
 MEDICAL CENTER

SCHOOL OF MEDICINE AND DENTISTRY

Jules Cohen, M.D.
 Professor of Medicine
 Senior Associate Dean for Medical Education

August 16, 1991

Ms. Jennifer McCarthy
 Special Committee on Aging
 United States Senate
 G31 Dirksen Office Building
 Washington, DC 20510-6400

Dear Ms. McCarthy:

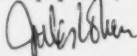
I write as a follow up to a memorandum we have received from Louis Kettel regarding a linkage of medical education and training to rural America. Dr. Kettel asked that we send you descriptions of any existing programs, and I'm happy to do that.

For several years we have been sending groups of third-year medical students to work in the rural health centers that are linked to the Mary Imogene Bassett Hospital in Cooperstown, New York. Their work there is with practicing internists and constitutes the second half of their third-year Internal Medicine Clerkship. Our objective has been twofold: to increase exposure of our students to medicine in practice-based settings and to expose students to the health care needs and problems of rural communities.

In addition, we are currently in discussion with four urban and four rural health centers in the Rochester area designed to put into place programs across the continuum of medical education--beginning with programs designed to attract students to the health professions and extending all the way through into the residency years--and we are doing this in association with our School of Nursing, the Eastman Dental Center, and our Department of Social Work. Once again, the object is to give our students exposure to the practice environment, particularly in primary care areas, to the health needs and problems of underrepresented and disadvantaged communities, and to the special health needs of rural populations.

Please let me know if I can provide you with additional information.

Sincerely yours,



Jules Cohen, M.D.
 Senior Associate Dean for Medical Education

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Item 8

RURAL MEDICAL EDUCATION PROGRAM

(RMED)

1990
ANNUAL REPORT

Department of Family Medicine
 SUNY Health Science Center Syracuse
 Macaran A. Baird, M.D., Professor and Chairman
 L. Thomas Wolff, M.D., Professor and Director
 Rural Medical Education Program

February, 1991

NAME CHANGE

Early in 1990 it became apparent, through conversations with individuals in cabinet level posts in the Governor's office as well as colleagues at the Health Science Center, that the name we had chosen for this program did not accurately and clearly convey its nature to those outside the field of medical education. We decided, therefore, to seek a more descriptive and understandable program name. After much discussion we changed the name of the program to the RURAL MEDICAL EDUCATION PROGRAM (RMED). Throughout the remainder of this report we will use this new name to refer to the program identified in our original literature and correspondence as the Extended Rural Preceptorship.

INTRODUCTION

Through the Rural Medical Education Program (RMED), the Department of Family Medicine places a small number of third year medical students in rural communities full-time for nine consecutive months to work and learn under the supervision of board certified family physicians and other specialists. Full academic credit is earned for this experience. Students who elect this program live in the rural community, returning to their home campus at the end of the course to complete their studies for the M.D. degree. The educational goals of the program are to:

1. Broaden the student's knowledge base;
2. Provide greatly expanded opportunities for the student to sharpen clinical skills;
3. Develop the student's skills in clinical problem solving and patient management;
4. Expose the student to the practice of continuous and comprehensive medical care;
5. Help the student develop independent learning skills;
6. Foster positive attitudes toward patient care in the primary care and ambulatory setting.

Additionally, program goals for this project are to:

1. Add flexibility to the undergraduate clinical curriculum so as to better meet the needs of students considering careers in a primary care field in a non-urban setting;
2. Strengthen ties with rural physicians and hospitals in the Central New York area;
3. Provide rural physicians with high quality continuing medical education programs on a regular and frequent basis;
4. Help rural communities to retain and recruit physicians;
5. Develop a rural network for more effective patient care and research activities;
6. Expand the Health Science Center referral base.

The RMED program offers a unique opportunity for the student to develop a long-term relationship with clinical preceptors in a rural community while becoming immersed in the delivery of primary health care to the local population. The student participates actively and extensively in continuous and comprehensive care of preceptors' patients across the age spectrum including management of both ambulatory and hospitalized patients.

The RMED program encompasses more than family medicine, also providing the potential to partially or fully satisfy, under appropriate supervision, College of Medicine requirements in ENT, Geriatrics, Emergency Medicine, Orthopedics, Radiology, Ophthalmology, Urology, Anesthesiology, Obstetrics/Gynecology, Pediatrics, Psychiatry and Preventive Medicine. Approval of credit for each of these areas is at the discretion of the respective departments and may vary on a site-by-site basis.

BACKGROUND (PRE-1990)

Work on the development of the RMED program began in 1988 with the successful application for a federal grant and establishment of the program by the Health Science Center as a five year pilot demonstration project. During 1988 and 1989 the program gained the enthusiastic support and participation of physicians and hospitals in several central and northern New York communities.

By the end of 1989 the first two students had finished their nine month rotation on the program. Dr. Pamela Fadness (MDCN-90), working in Canton and Potsdam under the supervision of Drs. John Dewar, Sandra McCloy, Jon Kay and Dan Palmateer, completed her stay in mid-November. Dr. Timothy Kitchen (MDCN-90), working in the Hamilton-Sherburne-Waterville area under Drs. David Haswell and Robert Delorme, finished in late December.

The initial work of establishing RMED, recruiting students and developing teaching sites was aided greatly by the presence of Dr. John Verby, creator and current Director of the highly successful Rural Physician Associates' Program at the University of Minnesota, after which our program is modeled. Dr. Verby completed a one year Visiting Professorship in our department specifically to help establish the RMED program.

PROGRESS IN 1990

1990 saw continued work on development of the structure of the program and expansion to additional teaching sites.

Student Placement. Barbara Michaelis (MDCN-91), began the RMED program in Oswego in mid-January, 1990, under the supervision of Dr. Corliss Varnum, a family physician, and Dr. Michael Nupuf, an internist. Ms. Michaelis, a Binghamton Clinical Campus student, earned credit for course work in Family Medicine, Obstetrics and Gynecology, Pediatrics, Radiology, Geriatrics, Preventive Medicine, Ophthalmology, Orthopedics, Emergency Medicine and ENT at the rural site.

Recruitment for 1991. Early in 1990 we began to direct our effort toward developing interest in the RMED program among the then second-year medical school class. The response was enthusiastic as far more students applied for the program than we were prepared to accommodate. This indicated that student confidence in the program was growing and that it was becoming seen as a viable alternative for a significant part of students' clinical training. By the end of 1990, through a process of interviewing, review of academic records, tentative assignment of students to teaching sites and visits by students to those sites, we had matched six students with teaching sites with starting dates varying from February through May, 1991.

Recruitment for 1992. In the fall of 1990 the first of two scheduled information meetings directed toward first and second year medical students was held. Attendance was better than expected and a number of applications were received. A second information meeting is scheduled for early in 1991. Our goal for 1992 is to place 10 students.

Student Financial Aid. During the project's first year much progress was made in developing the structure of the RMED program but recruitment of students for the second year proved quite difficult. In late 1989 the decision was made to create a financial incentive for students through establishment of a package of financial aid. This consists of a \$10,000 scholarship, housing, relocation expenses and provision of medical textbooks, for a total package of approximately \$15,000.

As the project had no resources for this financial aid package we turned to participating hospitals with the request that they provide the necessary funds. Although all rural hospitals in the region are struggling financially, most agreed to provide the resources with the understanding that the program would actively seek other sources of funds to share this expense in future years. The financial aid, along with growing student confidence in the program, has greatly increased student interest. By March, 1990 we had 12 applicants for the third year of the program.

New Site Development. During 1990 four new teaching sites were established in the communities of Cortland, Lowville, Rose and Watkins Glen. Three other sites, Canton-Potsdam, Hamilton and Oswego, have hosted students in the past, bringing to seven the number of established teaching sites. In addition, initial contacts were made in Malone, Saranac Lake, Groton, Pulaski, Alexandria Bay, Trumansburg and Watertown. We are hopeful that these communities will be able to join the program in a future year.

Participation in the RMED program requires a substantial commitment on the part of the hospital and physicians in the community. We want to be sure, therefore, that all parties involved understand the time and financial implications of their decision to participate. The development of new sites is carefully planned to include meetings with family physicians in the community, the hospital administrator, the hospital medical staff, the hospital Board of Trustees and the hospital's allied health professional staff. The development of a single site typically requires several visits to the community.

As part of the site development process the RMED program has developed formal Educational Affiliation Agreements on behalf of the Health Science Center with Canton-Potsdam Hospital, Cortland Memorial Hospital, Oswego Hospital, Lewis County General Hospital, Rome Hospital/Murphy Memorial Hospital and Schuyler Hospital.

A problem we have continually encountered in recruiting hospitals into the program is the financial burden of providing the required student financial aid. To help hospitals meet this obligation and thereby assure their continued participation we have submitted a grant proposal to the federal government requesting student stipends. We have also been active at the state level to generate support for this aspect of the program. This has included meetings with Key Legislators and the Director of the Office of Rural Affairs.

Medical School Support. Support by the medical school has increased over the past year. The Dean of the College of Medicine is actively assisting with the search for financial resources. The Dean of the Clinical Campus at Binghamton and his staff have worked closely with us to recruit their students into the program and to develop a curriculum that complements that of their campus. Evidence of this is the approval of completion of the required clerkship in Obstetrics and Gynecology at the rural teaching site by the Clinical Campus student who entered the program in January, 1990. This was the first major clerkship to be approved for completion at a rural site.

After the first year of experience all participating departments from both the Syracuse and Binghamton campuses, with the exception of the Department of Preventive Medicine at the latter campus, have continued approval of completion of their clerkships at the rural site if appropriate faculty are available. In 1990 the departments of Pediatrics and Obstetrics and Gynecology joined this group, indicating approval of completion of their clerkships at the rural sites if appropriate instructors are available. In addition, the Binghamton Clinical Campus Pediatrics Department has suggested the design of a clerkship for their students which would consist of 4 weeks of inpatient pediatrics at the Binghamton campus and 2 weeks of ambulatory pediatrics at the rural site. The Binghamton Preventive Medicine department has decided that due to the heavy didactic nature of their curriculum all students must complete the course at the home campus.

Support of the program during 1990 by individual members of the Health Science Center faculty was very gratifying. The following are faculty who made an all-day visit to a rural site to teach the student and present a Continuing Medical Education program to the local medical staff:

48-874 267

David Ayers, M.D. (Orthopedics)
 Ellen Bifano, M.D. (Pediatrics)
 Steven Blatt, M.D. (Pediatrics)
 Carl Bradenberg, M.D. (Surgery)
 Mantosh Dewan, M.D. (Psychiatry)
 Robert Eich, M.D. (Medicine-Cardiology)
 Paul Frymoyer, M.D. (Medicine-Nephrology)
 Warren Grupe, M.D. (Pediatrics)
 John Hagen, M.D. (Obstetrics/Gynecology)
 Richard Has, M.D. (Geriatrics)
 Philip Holtzapple, M.D. (Medicine-Gastroenterology)
 David Keith, M.D. (Psychiatry)
 Robert Kellman, M.D. (ENT)
 Dennis Kraus, M.D. (Urology)
 Zahi Makhuli, M.D. (Urology)
 Julia McMillan, M.D. (Pediatrics)
 David Murray, M.D. (Orthopedics)
 Herbert Schneiderman, M.D. (Pediatrics)
 William Williams, M.D. (Medicine-Hematology)

We are truly grateful to each of these teachers as they have contributed significantly to the strengthening of the program.

Their participation has not only resulted in valuable continuing medical education programs for rural physicians, but has also increased the understanding and acceptance of the program within the Health Science Center.

Documentation System. During 1990 we made significant progress toward the development of a system to document students' clinical experiences. The first draft of this system has been completed and work is underway on further refinements.

The major shortcoming of this early version was that it required manual compilation of data and entry into the computerized data base. This is not a great burden when dealing with only a few students but would quickly become overwhelming in terms of labor costs and error rates as the program expands. Accordingly, we are now at work to develop and refine a system whereby students complete a mark-sense card for each patient encounter, which is then run through an optical scanner. Resulting data are then written to a computer file and transferred to the program's master database.

When completed this system will enable us to efficiently collect and record patient encounter data with minimal error rates. Turn around time will be very short with weekly and monthly reports produced within days of receipt of raw data from students. This will prove valuable to preceptors in planning student clinical experiences and in credentialing students for more independent functioning.

Credentialing System. In 1990 we began the development of a credentialing system through which preceptors and hospitals can certify that students have become competent to perform certain clinical procedures without direct supervision. This system will assist hospitals in complying with Section 405.4(h) of the New York State Hospital Code.

The first draft of this system has been completed but not yet fully tested. To do so will require application at a number of teaching sites and we plan to accomplish this in 1991 with six students on the program. The primary question to be addressed is the appropriateness of the guideline regarding the number of times a particular procedure should be performed by the student under direct supervision before indirect supervision is allowable.

Addition to RMED Staff. In October, 1990 Dr. Katie Margo joined the RMED staff as Associate Professor in the Department of Family Medicine. Dr. Margo brings to the position almost ten years experience as a family physician with Health Services Association, Inc. at their rural Central Square offices. During that time she frequently taught medical students and held a clinical faculty appointment at the Health Science Center. Her responsibilities with the RMED program will include supervision of students at multiple rural sites and further development of the communication skills component of the program.

Faculty Development Program. In November, 1990 we presented a two day Faculty Development program to help primary preceptors understand their roles as teacher, mentor and manager of the student's curriculum. This workshop used lectures, discussion, trigger videotapes and videotaped role plays to present a combination of clinical teaching concepts and program specific administrative material. The workshop included a three hour session by Dr. Lynn Cleary from the Department of Medicine who recently completed a one month faculty development leadership program at the Stanford University Medical School. The program also featured Dr. Lyle Munneke, who has been a primary preceptor at the University of Minnesota's Rural Physician Associate Program since 1972.

Research and Professional Activity. During 1990 the staff of the RMED program initiated the following activities and research projects to further the aims of the program and help disseminate the basic concept behind it:

1. In the fall RMED Director Dr. Tom Wolff issued the final report of the New York State Health Research Council Advisory Panel on Primary Physicians, which he chaired. Among other recommendations, the report called for a more effective primary care curriculum for the state's medical schools.
2. RMED Education Specialist Peter Beatty submitted a proposal to the Annual Conference of the Society of Teachers of Family Medicine for a panel discussion on political, economic and programmatic issues related to the establishment of a rural medical education program such as the RMED model. The proposal was accepted and the panel discussion will be part of the STFM Annual Conference in Philadelphia in May, 1991.
3. Dr. Tom Wolff was invited to make a presentation at the 1991 Annual conference of the Society of Teachers of Family Medicine on the use of RMED as a model for a family practice/primary care track in medical education.
4. Dr. Tom Wolff and Dr. William Grant, Research Associate Professor in the Department of Family Medicine, initiated a study of the economic impact on a family physician's practice of the presence of a medical student.
5. Peter Beatty initiated a project to inventory and study the distribution of primary care physicians in the central and northern regions of the state.
6. Dr. Tom Wolff was appointed by Governor Mario Cuomo to his Health Care Advisory Panel. This is the Governor's primary advisory group on matters of health policy.

GOALS FOR 1991

1. Place and Support Six Students. The six students scheduled to complete the RMED program in 1991 will receive a total of 8640 hours of instruction by more than 50 volunteer physician instructors at the rural sites. In addition, together the students will engage in 60 hours of videotape/review sessions. Faculty from the Health Science Center will make 48 all-day visits to the six rural sites to teach the medical students and present continuing medical education programs to the local medical staffs. For each of these students, credit earned on the program represents approximately 45% of the credit hours in clinical courses required for graduation from medical school.

The aim of the RMED program will be to coordinate this activity such that the students have excellent learning experiences and that volunteer faculty gain the satisfaction of teaching without undue interference with their medical practices. We also seek to give the students a valid exposure to rural medical practice without inducing a sense of isolation from their peers and the academic medical center.

2. Develop Four New Training Sites. Initial contacts have been made with a number of communities in the central and northern New York region. Recognizing that not all communities will be able to participate in the RMED program each year, we plan to develop several more sites than students to be placed. We are hopeful that the communities of Watertown, Malone, Oneida, Saranac Lake, Groton, Trumansburg, Pulaski and Alexandria Bay will consider hosting a student in 1992.

3. Recruit Ten Students for 1992. A total of thirteen second-year students have applied for the program for 1992. The process of interviewing, ranking and matching with teaching sites will be completed by September, 1991.

4. Complete Program Information Booklet. This booklet, which will explain and illustrate the purpose and various aspects of RMED, will be completed and distributed early in 1991.

5. Implement, Test and Refine the Patient Encounter Documentation System. Work will continue on this project which will use mark-sense cards read by a scanner with resultant data written to a computer file. The final database for 1991 is expected to contain information on approximately 9000 patient encounters.

6. Pursue Permanent Funding. The aim of the RMED program and the Department of Family Medicine is to obtain permanent support for this endeavor from the State of New York through the State University. In addition, we feel that local communities should provide a significant portion of the financial aid provided to students as an incentive to enroll in the program.

In 1991 we will work toward financial security for RMED at both the state and federal levels. At the state level, and in coordination with the Health Science Center leadership, we will pursue this matter with both legislative leaders and the Executive branch. We will also continue to seek near term support for the program through federal grants and private foundations.

7. Faculty Development. In 1991 we will again present a faculty development program for primary preceptors. The content of this year's program will build on the previous year and we plan also to include current RMED students in a portion of the discussion.

CONCLUSION

The second full year of RMED has seen the program grow and become more established as a valid alternative within the medical school curriculum. Confidence in the program has grown among both students and faculty and support from the school's administration has increased as well.

Equally as important, interest in RMED among physicians and health care institutions in rural communities across the region has continued to grow. This reflects their conviction that RMED can play an important role in stabilizing and increasing medical manpower in the region.

Texas Academy of Family Physicians

July 29, 1991

**Written Testimony of the Texas Academy of Family Physicians
to the United States Senate Committee on Aging**

It is well known that the United States has a rapidly aging population. The most cursory look at our demographics sends a strong message that the percent of elderly people will rise during the coming years. It is well understood that episodic health care problems, chronic medical conditions and surgical procedures are more frequent in this population.

Many learned people address this problem from different vantage points and we will not presume to address the many possibilities of improving the health care services to the aging population. We would rather focus on one critical element: the supply of primary care physicians needed to provide basic and comprehensive health care services to this population.

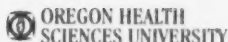
In Texas alone, we face the reality that 35% of our practicing family physicians will reach retirement age during the next 7 years. This fact is one of many statistics which points to a serious shortage of primary care physicians. Almost every proposal set forth to address this shortage assumes that family physicians will be available to "drive the system." Why? Because family physicians provide the most comprehensive and economical medical care available. In fact, family physicians are able to treat 90% of the patients they see.

This situation is important to note because it illustrates a paradox. On one hand, there is a significant demand for the services of primary care physicians, especially family physicians, and on the other hand, the supply of new primary care physicians in to the health care force is continually declining.

The drastic shortage of primary care physicians in this country must be addressed now. Every other industrialized country has recognized the value of primary care physicians and has encouraged the supply of more of these badly needed doctors. In Great Britain, 70% of practicing doctors are working in primary care. In Canada, 50% of the doctors are in primary care. In the United States, however, only 30% of our physicians are in primary care.

We urge Congress to recognize the complex problems surrounding the growing shortage of primary care physicians in this country and to ask the question, "If primary care physicians are in so much demand, why isn't the production of these physicians increasing?" We believe that the basic issues surrounding this question are:

- 1) U.S. medical schools have traditionally encouraged students to select medical and surgical subspecialties despite the surplus of these physicians. At the same time, students have been actively discouraged from entering primary care.
- 2) Reimbursement for the same medical procedure is lower for primary care physicians than for subspecialists. Likewise, reimbursement for the same medical procedure performed in rural areas is lower than for services performed in metropolitan areas. Further, reimbursement for cognitive patient care, which primary care physicians most often provide, falls far behind reimbursement for procedural patient care most often performed by subspecialists.



Item 10

3181 S.W. Sam Jackson Park Road, L102
Portland, Oregon 97201-3098
Fax (503) 494-4551

**Island of Medicine
Office of the Dean**

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J.S. Reinschmidt, M.D.
Associate Dean
(503) 494-7646

Bryon Backler, M.S., J.D.
Associate Dean for
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(503) 494-6787

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Associate Dean for
Student Affairs
(503) 494-6228

August 19, 1991

Jennifer McCarthy
United States Senate Special Committee on Aging
331 Dirksen Office Building
Washington, DC 20510-6400

Dear Ms. McCarthy:

I attended the special workshop entitled "Linking Medical Education and Training to Rural America: Obstacles and Opportunities" held in Washington on July 29, sponsored by the Senate Special Committee on Aging. Pursuant to the information that you are interested in learning about existing rural health medical education program, I wish to briefly describe the endeavors in which we are currently engaged.

The Oregon Health Sciences University has initiated a series of initiatives providing leadership and addressing the serious and escalating rural health care problems in this predominately rural state. These include the obtaining of an Area Health Education Centers Program grant in which we will have required rotations for medical students in rural clinical practice units, required rotations for family medicine residents in a large rural area of the state with the intention to establish an additional family medicine residency which will be located in an underserved rural area of the state. The development of a nurse practitioner education and training program headquartered in one of the AHEC areas with an emphasis on primary care, family nurse practitioner training.

The School of Medicine has been engaged in a several years long effort to redefine the curriculum of the school to integrate the curriculum in the basic and clinical sciences to assure that the sciences basic to medicine are relevant to clinical practice. There is to be an emphasis on primary care and an increased emphasis on education in the ambulatory care setting. Each student will have a required ambulatory care rotation plus a six weeks primary care rotation primarily in the rural areas of the state. Additionally each student during these rotations will be required to develop a community project. Although these may be specific medical cases, it is our intention that they will focus primarily on health care issues in the community such as the care of the aged, underserved, etc.

The state office of Rural Health was transferred to the Oregon Health Sciences University two years ago with the responsibilities for developing and implementing a variety of programs to enhance rural health care. These include tax incentives for physicians, nurse practitioners and physician assistants who practice in rural underserved, a scholarship program for loan forgiveness for students who agree to practice in such areas for a stipulated period of time, assistance to small rural hospitals, a recruitment and retention program and other programs now being developed. I have responsibility for the Area Health Education Centers Program and the curriculum redefinition.

I think it is clear from the above that Oregon Health Sciences University is involved in a multi-dimensional effort to address the problem of availability and continuity of health care services, particularly in the rural area of this state. I feel that this multifaceted problem can only be reasonably addressed through such a multidimensional approach. I should be pleased to respond to any questions you may have.

Sincerely

J.S. Reinschmidt, M.D.
Associate Dean

RSJ:mbd

Item 11



Tulane University Medical Center

Program in Community Medicine
School of Medicine
1430 Tulane Avenue
New Orleans, Louisiana 70112
(504) 588-5571

JULY 31, 1991

Ms. Jennifer McCarthy
United States Senate
Special Committee on Aging
532 Dirksen Office Building
Washington, DC 20510-6400

Dear Ms. McCarthy:

In response to your memorandum of July 18, 1991, I send you this description of our Community Medicine offering to fourth year students. One month of activity is required of all students. As you can see, this can be satisfied in a variety of ways. Although you are primarily concerned with medical care in rural United States, I include our overseas opportunities because they acquaint the students with some of the problems they will meet in isolated rural communities in this country.

Plans exist to expand the experience to include month long stays with rural physicians.

Sincerely,

Irwin Cohen, M.D.
Director
Program in Community Medicine
in National and International Sites

CORE CLERKSHIPS

1. COMMUNITY MEDICINE

This requirement may be fulfilled by taking the Core Clerkship or by choosing one of the optional programs at international or national sites. Following are descriptions of these clerkships.

A. CORE CLERKSHIP

Examines the various roles of the physician and some of the problems a physician encounters practicing in a community. Seminars are conducted by faculty and community professionals in the morning. In the afternoon students are assigned to serve with various private or public health agencies which deal with health problems on the community scale.

Examples of such opportunities are: working with the State agencies involved with AIDS, child abuse, environmental quality and maternal and child health and with private agencies involved with substance abuse, health of the elderly and death (hospice). A formal written and oral presentation of the project is required.

GRADING: 1/3 - attendance and participation

1/3 - project presentation

1/3 - final exam

Of four weeks (one block) duration, not offered in Blocks 02, 04, 06, or 08; each of Blocks 01, 03, 05, 07, 09, and 10 has a maximum quota of 14 students.

B. OPTIONAL PROGRAMS IN COMMUNITY MEDICINE AT INTERNATIONAL SITES

SUPERVISOR: Irwin P. Cohen, M.D.

CREDIT: This is considered an intramural clerkship for fourth year medical students. It can fulfill Tulane's Core requirement in Community Medicine plus one block of either Outpatient Pediatrics or Selective credit. The elective is offered on a session basis only. A session consists of two consecutive blocks, or in the case of Session 3, block 5 plus December (Session 3a) or December plus block 6 (Session 3b).

The first week of the sessions will be spent in New Orleans attending the regular Community Medicine lectures in the morning. In the afternoon, discussion groups will be held addressing various aspects of developing country health care delivery, except for Session 3b when all 8 weeks will be spent at the overseas site.

MD/MPH candidates electing International Health can be exempt from the first week in New Orleans but then must spend 8 weeks at the overseas site.

SPECIAL NOTES:

Based on past experience, there are more willing students than places available, especially for certain Sessions. When you sign up, please be as certain as possible that you do want to go. If you are only toying with the idea, and then ultimately cancel, you may have uselessly taken a spot from someone who really wanted it. Last year, students were refused spots. Please be thoughtful and considerate of others.

SPECIAL REQUIREMENTS:

1. Students will be expected to design and execute an epidemiologic study which will be submitted to Dr. Cohen in written form and presented at a seminar in the Spring of 1992.
2. Travel costs and living expenses are the student's responsibility through Community Medicine. Significant discounts can be obtained on some flights. The student will be asked to pay for room and board.

(GRADING): 50% based on in-country clinical evaluation by site director; 50% - written epidemiologic project.

For MPH candidates - up to three credits toward graduation can be earned with registration in a special studies course a SPH&M.

If you need more information call Dr. Cohen at x5571. Additional information concerning the program will be sent to the boxes of all those who sign up.

OBJECTIVES:

1. To nurture in your physicians feelings of humanism and respect for patients' dignity.
2. To improve history taking and skills of physical examination.
3. To promote interest in primary care, community medicine and the team approach to health services.
4. To stimulate interest in medical practice in a developing country.
5. To experience medical care in societies with other cultural values.
6. To provide physician expertise to overseas health care teams.

SITES:JAMAICA, WEST INDIESDescription:

The program is supervised by Dr. Anthony Hall. Students, some working in pairs, will live with Jamaican families and work in the rural areas of Cornwall County on the western end of the island. They will be integral members of district health care teams and will serve as physicians. At one site, Lucea, our students will work with two medical students from the medical school of the University of the West Indies.

Approximate cost: \$1200 for 2 months (including air fare, 50% discount).

ST. THOMAS AND ST. JOHN, U.S. VIRGIN ISLANDSDescription:

Approximate cost: \$1600; cost of housing is \$200.

The program is supervised by Dr. Neville Connell, Director of Community Health for St. Thomas and St. John. The activities can be divided into three segments:

1. Outpatient clinics at St. Thomas and Hanson Hospital with MBH home visits.
2. Home health visits on St. Thomas.
3. Outpatient services and home health visits on St. John.

BELIZEDescription:

Approximate cost: \$1500

The program is supervised by K.S. Rao, Director of Primary Health Care. Students will be assigned to San Ignacio, Punta Gorda and Baniaga. English is the official language of the country. They will have outpatient clinics in the district capital and in those outlying areas visited by mobile services. They will discuss and plan health care priorities with district health care teams, village committees and the village health promoters and private volunteer organizations. This is a more rural and less structured program than either Jamaica or the USVI.

ST. LUCIA

This is a new English speaking international site located in the Windward Islands of the Caribbean Sea. It is at the 14° latitude, is 240 square with a population of 140,000. Students (two per 8 week session) will work at two rural health centers. They will live where they work, either with host nationals or in quarters attached to the health units. They will have clinics with district medical officers, make home visits with community health aides, provide community health education and initiate, with the Ministry of Health, the investigation of a health problem. Students, in addition to the formal report of their epidemiologic project, because this is a new program, will be required to keep a diary of activity, patient log and to analyze and evaluate their experience.

Supervisor: Dr. Michele Gons in Castries with the Ministry of Health.
 Cost: Travel - \$800-900 round trip from New Orleans; \$500-600 round trip from Miami but get the best deal you can.
 Housing: \$500-600 - could be less if housing attached to health centers is free. If with host, this would include breakfast and dinner.

CALI - COLOMBIA

This program is temporarily suspended. It will be reviewed in April 1991.

Description:

Required: some facility (not fluency) in Spanish is mandatory.
 Approximate cost: \$1700; the cost of housing is subsidized.

The program will be supervised in Cali by Dr. Diego Mejia-Gomez, chairman of the Department of Family Practice at the Universidad del Valle.

The exact nature of each student's program will be arranged with Dr. Mejia upon arrival in Cali. Although I expect the heart of each student's program to be the outreach ambulatory clinic and home health service, El Diamante, in Agua Blanca, a series of poor squatter neighborhoods on the outskirts of Cali, other experiences can be added:

1. Cardiac clinics at Fundacion Valle de Lili
2. Inpatient rounds at the University Hospital.
3. Outpatient services at other public clinics in Cali.
4. Clinics in more remote areas such as Bajo Colima and Toranzo.

GUATEMALADescription:

The program is run by Dr. Carlos Andrade of Francisco Marroquin University. Students will spend the first week in Guatemala City working in the ER and ambulatory clinics of Herrera-Lierandi Hospital, and will live with a Guatemalan family. The next six weeks will be spent in the village of San Juan Sacatepequez, about 30 km from the capital. Our students will work along side medical students from Francisco Marroquin who are all fluent in English. Thus, facility with Spanish, but not fluency, is necessary. Although living accommodations vary, (homes with families, cheap, empty houses, etc.) of all our program's living conditions in San Juan most closely approximate "roughing it".

Approximate cost: \$1200

C. OPTIONAL PROGRAMS IN COMMUNITY MEDICINE AT NATIONAL SITES

SUPERVISOR: Irwin P. Cohen, M.D.

CREDIT: This is considered an intramural clerkship for fourth year medical students. It fulfills Tulane's core requirement in community medicine. The elective is offered on a block basis and is offered in Blocks 01 to 10. If desired, two consecutive blocks may be selected, the second of which could be used to satisfy core requirements for one month of ambulatory pediatrics or one month of intramural elective.

SERIAL NOTES:

Based on past experience, there are more willing students than places available, especially for certain Sessions. When you sign up, please be as certain as possible that you do want to go. If you are only toying with the idea, and then ultimately cancel, you may have uselessly taken a spot from someone who really wanted it. Last year, students were refused spots. Please be thoughtful and considerate of others.

SPECIAL REQUIREMENTS:

Students will be expected to take part in, and provide a written report about, a community oriented project. This project need not reach its goals in the month the student is there. The student need only achieve a reasonable objective in the overall plan.

GRADING: 50% clinical evaluation by on site supervisor.
 50% evaluation of written document about project.

OBJECTIVES:

- Are identical to 1-3 in the International Site section with the addition of:
4. To stimulate interest in medical practice in underserved areas of the U.S.

SITESHAMLIN (POP. 1,000), LINCOLN COUNTY (POP. 22,000), WEST VIRGINIADescription:

Students will work in an ambulatory health facility in Hamlin with the clinic health staff which includes 3 physician's assistants, a family practitioner and consultants from Marshall University. Marshall University students are always present. Services include family practice, pediatrics, prenatal care, occasional home visits and an outreach geriatric program. Students can also work with the Valley Health Systems which provide OB-GYN services. Over 50% of the patients are Medicaid recipients. Students will live with a local family. Housing is entirely subsidized. Students must pay for food only.

OKLAHOMA-CHEROKEE NATIONDescription:

Students are eligible for a reimbursement from the Indian Health Service at \$1200/month, which must be applied for at least one month prior to departure.

The program is supervised by Dr. Patrice Whistler. The student will experience outpatient services at Hastings Hospital of the Indian Health Service, but most time will be spent with the ambulatory, home health and preventive services of the Cherokee Nation. This is a large group of Americans who choose not to live on a reservation. It is necessary for students to drive to Tahlequah (13 hours) to be able to use their cars during work.

ARIZONA - SUPAI NATION

This program is supervised by Elizabeth Koch. The student will live in the home of Dr. Koch to the upkeep of which the student will be required to make a small contribution. The Supai live in the isolated Navasu Canyon in northern Arizona and number about 700. To get to the reservation the student will have to drive to Hilltop, leave the car, and walk or ride a horse or helicopter the final 2 miles into the canyon. This can be worked out. Travel to and from the Supai Nation will be reimbursed by the Indian Health Service at Parker, Arizona upon application for those funds which should be done while at the reservation.

LOUISIANA COMMUNITY HEALTH CENTERS

The student will participate in a family practice ambulatory clinic and in the community outreach programs at the various sites which largely serve disenfranchised communities. Each site has a board certified family practitioner. Housing will be provided.

The sites are:

Franklin with a satellite in New Iberia - 2 students/block
 Lake Charles - 2 students/block
 Natchitoches - with satellites in Leesport, Leesville and
 Tallulah - 1 student/block
 Sicily Island - 1 student/block

If you need more information, call Dr. Cohen at X3571. Additional information will be sent to the students who register for these programs.

REGULAR, INTERNATIONAL AND NATIONAL COURSE SCHEDULE

<u>INTERNATIONAL</u>	<u>NATIONAL</u>	<u>REGULAR</u>	<u>BLOCK #</u>
Session 1	All Blocks	14 Students/max No Course in N.O.	01 02
Session 2	All Blocks	14 Students/max No Course in N.O.	03 04
Session 3(a)* 3(b)*	All Blocks	14 Students/max No Course in N.O.	05 06
Session 4	All Blocks	14 Students/max No Course in N.O.	07 08
Session 5	All Blocks	14 Students/max 14 Students/max	09 10

Jamaica	5	students	max/session
Colombia	2	"	" "
USVI	3	"	" "
Belize	3	"	" "
Guatemala	2	"	" "
St. Lucia	2	"	" "
Oklahoma	2	"	max/block
Supai	1	"	" "
West Virginia	1	"	" "
Louisiana	6	"	" "

*International Session 3(a) involves block 05 plus December. The first week is spent in New Orleans with the regular course and the subsequent 7 weeks at the overseas site. International Session 3(b) involves December plus block 06. All 8 weeks will be spent at the overseas site.

International Session 3(a) and (b) is to be considered a single session and will accommodate the normal maximum number of students per program per session (as listed in the table above), the total number of registrants being summed in December.



TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER

SCHOOL OF MEDICINE - Office of the Dean

5001 4th Street
Lubbock, Texas 79430
(806) 743-5000

In a letter to the Council of Deans, Dr. Louis J. Kettel of the Association of American Medical Colleges invited a response to you about rural health medical education programs that might exist in our institution.

Texas Tech University Health Sciences Center is actively developing a number of programs in rural health medical education. These programs involve comprehensive outreach efforts by the Schools of Nursing and Allied Health, as well as by the School of Medicine.

In the School of Medicine of which I am most familiar, these efforts include the following:

1. MEDNET - This land-based and satellite-based television transmission provides ongoing medical, nursing and allied health education to healthcare professionals in nearly 30 rural sites across West Texas. It has the potential of extending the network into surrounding states which include Oklahoma, New Mexico, Colorado and Louisiana.

In addition to the educational materials, we are currently developing a long distance consultation service which makes it possible for physicians in remote areas to present challenging clinical problems and receive direct consultative advice. This program has been effective in reducing expensive and potentially life threatening patient transports.
2. Preceptorships are available and encouraged for medical students in rural communities extending from the panhandle of Texas in the north to the United States-Mexico border. These programs have been useful in encouraging students to pursue a career in rural practice.
3. Practitioner preceptorships - Short Courses are available for practicing physicians in rural areas to return to one of our four regional academic health centers for the purpose of refreshing their skills and knowledge. In some cases, efforts are made to provide back-up for their practice from faculty members.
4. On Site Educational Programs - Individual speakers are encouraged to provide ongoing continuing medical education at hospitals and county medical society meetings throughout the geographic area.
5. Youth Exchanging with Seniors - This program uses the Health Sciences Center as a base of operation for a program operated through the county extension service, Future Homemakers of America and 4-H. In this program, youth provide assistance to elderly individuals in rural communities. Through their participation, the youth learn about healthcare problems and the systems that are in place to deal with these problems.
6. The School of Nursing has independently developed a computer-based systems program to help physicians and hospitals in rural areas with those computer-based applications that are necessary to manage hospitals and physicians offices.
7. The Binational Healthcare Program of our El Paso campus is devoted to the development of solutions for healthcare problems at the border. In many cases, these issues and solutions relate to migrant healthcare and other rural healthcare problems.

As you can see, Texas Tech University Health Sciences Center has a long standing and deep commitment to the development of medical education programs in rural health. Your committee is to be commended for its efforts in this area. I wish you every success in your upcoming workshops.

Sincerely yours,

Darryl M. Williams, M.D.
Dean, School of Medicine

Item 13

THE UNIVERSITY OF NORTH DAKOTA
FAMILY NURSE PRACTITIONER/PHYSICIAN ASSISTANT PROGRAM

The University of North Dakota Family Nurse Practitioner/Physician Assistant (FNP/PA) Program is not just another educational program. Our expertise and resolve is devoted to meeting the ever-increasing challenges of rural health care delivery and needs of an aging population. We have 20 years of experience in preparing FNP/PAs to provide primary health care in collaboration with physicians and other health care providers. Consumers and health professionals alike have long recognized the need for FNP/PAs as a resource to assist in facing the many new and complex challenges of rural health care delivery.

We have successfully prepared 427 clinically competent nurse practitioners and physician assistants by taking into consideration not only past academic background but also previous work experience. We select highly motivated nurses with significant professional nursing experience who are willing to live and work in rural and health manpower shortage areas. Our graduates' performance on national certifying examinations and our graduate employment rate testified that our program design is consistent with end product success. Our graduates are well accepted by consumers and are indeed affecting the accessibility to and quality of primary health care services in rural settings and, most significantly, to the rapidly increasing numbers of elderly citizens in the region. Our commitment to prepare FNP/PAs as an effective response to the urgent rural health concerns and problems of communities continues.

The Program's response to the primary health care needs is further documented from data obtained from our 1988 mail survey to our graduates which had an 84% response rate. Significant findings of the survey are: 53% are employed, 76% are functioning as nurse practitioners and/or physician assistants, 63% are in family practice, 61% are in rural practice settings, 65% are within the county or "part shortage" area of a Primary Care Health Manpower Shortage Area and 32% are in OHHS Designated Health Manpower Shortage Areas. The Program faculty is extremely gratified by the demographic distribution of our graduates to rural primary health care practices, and our deployment strategy (striving to match students and physician-preceptors before Program entry) is oriented to accomplishing this goal.

Our successful recruitment strategy is to identify applicants from communities in need who are willing to return to the area to practice. In rural and health manpower shortage areas, where the need for primary care providers is the greatest, the applicant pool is primarily non-BNPs prepared nurses. The rural health care delivery system must rely heavily on these local nurses.

The majority of our students are recruited from the professional nurse pool of communities in need. A physician in the community agrees to be the preceptor. The Program admits the applicant/preceptor team and continues to work with both the student and the preceptor to strengthen the team relationship throughout the 18-month curriculum. Upon Program completion, the collaborative team usually continues in the practice setting. Because the student originates from the community and a majority of the clinical experiences occur in that setting, the new graduate has a high level of commitment to practice in the same setting. Because of this commitment to the area and their sensitivity to the area's history, culture, economy, and environment, our graduates are retained as providers of services in the community.

The rotating modular curriculum also is an integral part of assisting students in maintaining ties and commitments to their home communities. It is, therefore, supportive of the deployment strategy. It also increases the accessibility of the Program to married women. These individuals often want to further their education, but are unable to leave home for protracted periods of time due to family responsibilities. In relation to long-term stability of FNP/PA practice, it is our experience that candidates from the rural communities are most likely to return to the same setting and practice for extended periods of time. The Program goal of improving the quantity and quality of primary health care services is supported through utilization of the described deployment strategy.



Undergraduate Medical Student Education

Advanced Clinical Experience in Rural Health Care is a required four week rotation for senior students at the University of Nevada School of Medicine. The objectives of this rotation are to provide the student with the opportunity to practice with a preceptor in a resource scarce area, to learn the referral patterns unique to rural based primary care and to serve as a sub-internship for senior students. As a sub-internship, students are encouraged to use the rotation as an opportunity to identify areas of expertise as well as gaps or learning needs in their medical education.

Students are placed with primary care physicians in multiple sites throughout rural and frontier Nevada. They initially negotiate a learning contract with their preceptor and review a clinical skills inventory that is used to help the student define areas of interest and/or need that they wish to focus upon during the rotation. The clinical skills inventory has been developed for use during the rotation only and reflects skills that are representative of rural primary care practice settings.

Students are required to describe their perceptions of rural medicine prior to the rotation and then describe how the rotation has reinforced or changed this initial perception. With the help of their preceptor, students also identify a community resource that the physician utilizes in his practice and assesses the quality of the service including evaluating the cost of the service.

New preceptors are required to attend a Preceptor Development Conference that is offered annually by the school. This conference describes the initial student preceptor negotiation process, teaching clinical skills in an ambulatory setting and information on feedback and evaluation. In addition, the dean facilitates rural based preceptor development conferences semiannually to discuss issues that are unique to the rural rotation.

Students are expected to live in the community for the entire month and are housed by volunteer families in each community. Transportation costs are the responsibility of the student.

Graduate Medical Education

Third year residents from the Department of Family and Community Medicine spend four weeks with a preceptor in rural Nevada. The objectives are to expose the resident to rural practice and help them to identify clinical areas they will address in their last year of residency training. Housing for the resident and their family is provided at no cost by the preceptor.

Item 15



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August 6, 1991

Portia Mittelman
Staff Director
Special Committee on Aging
U.S. Senate
Washington, D.C. 20510-6400

Dear Ms. Mittelman:

I appreciate the invitation to the Medical Education for Rural America Workshop. I agree that it is a critical time for rural communities. Declines in rural economies, schools, and health care challenge the existence of rural America. Health, education, and the economy are inextricably linked; similarly, the solutions to these problems are also linked. We need to utilize government resources to tell students that rural practice (or teaching, etc.) is rewarding, reimburse rural professionals (doctors, teachers, etc.) at a level that tells students that rural physicians (teachers, etc.) are as respected by the federal government as they are by their communities, and assist educators who are truly interested in rural communities to develop programs and faculty that emphasize rural health or education. Certainly similar efforts in transportation, communication, community development, and other areas would complement the above. I will continue with rural health examples:

RURAL STUDENT PREPARATION Research tells us that rural students return to rural communities to practice. Many rural students currently do not finish high school or attend college, much less excel in college. Rural school systems have filed suit (many successfully) in fourteen states to improve education by removing rural discrimination in state funding for education. Rural education must improve so that rural students may enter health professions and return to serve rural America.

RURAL MEDICAL EDUCATION PROGRAMS The training of urban and rural students in urban areas socializes them into urban choices. Health professionals should train in rural areas. Often medical students lead the way in this effort. Efforts by students in New Mexico (Project Forvenir) and the North Carolina Student Rural Health Coalition trade important services for indigent patients in exchange for hands on training in rural areas. Last year we supported an ETSU student who established a Rural Student Interest Group and a MASH Workshop (Medical Applications of Science in Health). This is a health careers workshop for high school students from underserved areas in Northeast Tennessee. This year nursing and allied health students and faculty are participating as well. This student interest at the high school level and even before is extremely important to preparation for a career in rural health. At ETSU, this is the first contact for our series of Continuous Rural Programs. This series continues with special admissions, rural presentations, and rural preceptorship opportunities.

PRIORITIZE RURAL AND PRIMARY MEDICAL EDUCATION PROGRAMS - PLEASE DON'T DILUTE SCARCER RESOURCES We would all like enough money to have a adequate Departments of Rural, Community, and Family Medicine at all medical schools, but there is not enough money, faculty, or student interest to accomplish this. It is better to support and expand true rural and primary care programs in schools which prioritize rural and primary care rather than trying to establish departments of family medicine in schools that have no interest in primary care or family medicine whatsoever. Other reasons not to have an FP Department in all schools:

Students in such medical schools have little or no primary care interest (as many as 50% of students choose ophthalmology in one such school).

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Research institutions (driven by NIH funding) distort the primary care mission. I was in such a Department at Baylor where the institutional and chairman's drive for research (for promotion and academic credibility) was so high that resident education and primary care emphasis failed. Trying to overturn the negative primary care environment in those schools will take the concerted effort of the entire faculty and dean. These schools could care less about primary care curriculae or promotion of rural faculty who devote their lives to training and advising rural interested students.

Dr. Whitcomb's comments regarding family practice funding as having marginal impact on primary care and rural are true. Family practice does not always promote rural and primary care. Some departments of family medicine can often eat up scarce dollars just to exist. Others actually turn their own students away from primary care choices. It would be a much better use of dollars to have the rural interested students in these institutions escape to successful rural programs in various states or to the Appalachian Preceptorship and other similar preceptorships such as AMSA's Health Promotion/Disease Prevention Project, rather than stay in their own institutions and endure the feeble efforts of a few weeks exposure to rural concepts.

Our Appalachian Preceptorship is now in its eighth year. This program attracts medical students from all over the nation to introduce them to rural health. Many of these students have no past training in primary care or family medicine. We can only accept 12 students a year out of over 40 applicants. AMSA's Health Promotion and Disease Prevention program accepts 120 out of 400. Over 80% of these students choose true primary care careers.

Why not invest money in programs with documented success in recruiting for rural and primary care rather than waste it on urban, subspecialty-oriented medical schools? Faculty from ETSU and other rural-oriented schools continue to work as advisors for students and residents regarding careers in primary care and rural health. Faculty from other medical schools figure out how they can avoid students to have the time to work toward research and promotion.

Some programs in family medicine do attempt to provide special training in rural health. They do so by hiring rural practice faculty and integrating rural training within the curricula. Most of the time they do so because they feel the need and they happen to have several relatively good sources of finance. Unfortunately most family practice programs are too short of the motivation, funds, staff, or faculty to spend extra effort in this area. Many are far too dependent on practice income.

Provide funding for additional rural faculty that would work at least half time in Family Medicine programs. These faculty would report to the Public Health Service as advocates of rural and PHS careers. They would develop rural curriculae and support these efforts at their departments. Other funds would be needed to train these faculty for at institutions such as WAMI or ETSU or UNM/Bufalo to give them the faculty development necessary to prepare them in rural curriculum development and rural site development. Annual reports of faculty progress in implementing these programs should be well documented. We are about to survey rural faculty regarding the resources that they have and need and would be happy to report the results to you.

Emphasize rural faculty development in grants and funding. I would be happy to develop a proposal for a rural health education center (RHEC) that would encompass the training of these faculty. The setup of these centers would be similar to rural research centers, but the purpose would be rural medical education instead of rural research. The RHEC would take on a multi-state responsibility for tracking potential rural health providers from rural schools through college and health professions training. The RHEC would train rural faculty in the development of programs and curricula. The RHEC would have significant rural models in operation and would welcome visiting faculty or government officials at any time. It would support rural health education programs through information retrieval about articles, speakers, programs, and research regarding rural medical education.

There is a great need for Rural Health Education Centers. There will be shortages in rural providers for decades. State programs are limited to state operation and limited state budgets. Division of Medicine funds are traditionally program- or department-oriented. Occasionally, programs such as our Minifellowship in Rural Medicine branch out and attempt to train other faculty in other programs. We would like to expand this model to more faculty.

This year's Minifellowship in Rural Family Medicine will train six minifellows from six different states. The hope is that they will go back and establish rural programs and rural faculty development in their own states. Each of them, however, will have to pursue funding, faculty, staff, and other resources from state or federal sources. It would help to establish four or five rural medical education centers across the nation and charge them with the responsibility for helping the medical schools and primary care residencies in their regions to develop rural faculty and rural programs. The centers would demonstrate the federal commitment to rural medical education.

Rural Medicine is a developing specialty. Rural Medicine is at the same spot Family Medicine was twenty-five years ago. Just as Family Medicine arose in response to a vacuum in American healthcare, Rural Medicine is similarly on the rise. Pioneers are defining "Rural", describing the boundaries of the specialty, and examining current and needed resources, assets, and limitations. For example, Rural Medicine involves community medicine, practice management, and procedures far more than Family Medicine. Family Medicine more and more is excluding obstetrics and procedures to accommodate urban and suburban practice, especially HMO's and multispecialty groups. This in turn results in residents and students who are less comfortable practicing the type of medicine needed in rural areas. Rural Medicine and Family Medicine are related, but they resemble separated stepbrothers rather than offspring or siblings.

There may be resistance from some areas of Family Medicine for prioritization of the rural effort. Many FP faculty have never attended FP Programs. Most have not practiced in rural towns. Family medicine academicians often are or have become career academicians pursuing the corrupt medical education model, hoping vainly to "buy" academic credibility by researching and teaching like the specialists. They have lost the mission and origin of family medicine to serve the public who created them. They run from grant priority to grant priority in the aimless pursuit of special funding. They doubt the permanence of Geriatrics, Rural Health, and AIDS as funding priorities. Some may even feel guilty for promises they may have made to governments to deliver the right kind of doctors. Family Medicine has long and successfully used the promise of rural manpower to obtain state and federal funding. However, Family Medicine has only been marginally successful in doing so as indicated by Dr. Whitcomb.

One of the reasons for this marginal success is that there is little if any rural emphasis in family medicine programs. Only recently have family medicine academicians come to grips with the federal health policy issues at hand. Family medicine forms short term task forces to study rural issues, not long term committees. FM rarely (if ever) asks for rural faculty development and rural emphasis in grants. Fortunately, in the past few years this has changed. However, without the prodding of federal and state mandates and funding, there will be no major move in this direction.

I am also for healthy competition. If Rural Medicine is mentioned as a possible specialty and some movement is made in this direction, Family Medicine will have to respond to this challenge. Some possible results of this policy:

1. Family medicine will broaden their membership to include more members (AAFP policy often excludes rural general practice doctors)
2. Family medicine will instruct residency review committees to emphasize outcome (quality rural practice) rather than structure (numbers and type of faculty and specialist, hospital size and location, etc.)
3. Increased pressure for RBRVS and the removal of geographic differentials that hamper rural practice
4. Decreased resistance by organized medicine to mid-level providers
5. Increased rural committee and council structure within the organization. This may mean permanent rural committees or rural representation on all committees.
6. Increased pressure on medical school curriculum committees to provide rural and primary care experiences.

Once Family Medicine sees that the rural emphasis is here to stay, it will be more enthusiastic or left behind. With increased emphasis on Rural Medicine and Family Medicine, medical schools would be forced to pay attention as they develop curricula, admission policies, etc.

In short, we must find rural students, attract urban students to primary care and rural careers, maintain their interest, prepare them adequately, and reward them for their efforts with relief from debts and the fair reimbursement that RBRVS originally promised.

The foundation for all the above is true reimbursement reform, beyond the current RBRVS proposals. Without this, the above proposals are useless. We must pay more to get and keep rural doctors out there. I just talked to a schoolteacher tonight (other than my wife). We came to the decision that it's not really the money that schoolteachers and rural doctors want. It's the respect that in our society in the 80's and 90's associates with money. We need teachers and primary care doctors. We must be willing to respect them for what they do and that means better funding.

We appreciate the funding assistance in the past. Without federal funds our rural programs would not exist. Help rural faculty fulfill their dreams of training students for practice in rural America.

Sincerely,

Robert C. Bowman, M.D.
Director of Rural Programs

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CONTINUOUS RURAL PROGRAMS AT ETSU

Information for Rural Faculty and Administration

Outline

- I. Rationale for a continuous approach
- II. Premedical preparation
- III. Medical school
- IV. Residency and post-residency training
- V. State support for graduates
- VI. Facilitating Comprehensive Efforts
- VII. Health policy
- VIII. Core Rural Concepts Curriculum
- IX. ETSU - a broad range of services

CONTINUOUS RURAL PROGRAMS

INTRODUCTION Rural America is desperate for physicians. Lack of physicians is a factor in access to health care, in rural hospital closure, and in the loss of jobs in rural areas. All educators need an understanding of the basic steps in the process of becoming a rural physician. Rural health education is in a constant state of flux. Some previous studies have not shown short-term rural experiences to be valuable in the production of rural physicians. Little is known about the selection process or curriculum of these rural programs. Medical students with limited rural experiences must eventually return to the urban, subspecialty medical school environment. At ETSU we feel that a continuous and comprehensive approach is necessary in order to address the nation's needs for rural providers.

FOUNDATIONS OF EFFECTIVE RURAL PROGRAMS

RURAL BACKGROUND AND LOCATION ARE IMPORTANT FACTORS Studies of the decision for rural practice in students and family practice residents highlight the importance of a rural background for the trainee and spouse. The location of the training is also important as graduates tend to stay near training locations.

INSTITUTIONAL COMMITMENT This is a much neglected component, but it is an extremely important one as rural program directors seek to obtain the support necessary to establish rural programs. This commitment must be reflected in the support from the state, the leadership of the deans and chairmen. In these times of difficult state budgets, new or different programs like rural are likely to face big cuts or termination without strong support on all levels.

SUPPORT FROM STATE RURAL ORGANIZATIONS Rural organizations offer important assistance in developing rural programs. They can often share resources and facilitate funding efforts. When the need for rural programs is challenged, support from an Office of Rural Health, a Primary Care Association, and the state medical associations is crucial. State and regional departments of health can also be major contributors to rural health efforts.

LOCAL SUPPORT Support from rural communities is important. Nothing can terminate a training program faster than failure to work with a community. This is especially true in rural health. Assistance from the primary training hospitals is important also. Building rural programs takes a lot of time and effort working one on one with key individuals and meeting with the leaders of the community, the hospital, and the health professions.

ACHIEVING CRITICAL MASS In order to lay the foundation for rural programs, one must maintain current programs and obtain the personnel necessary to establish a new program. This involves meetings (at all levels), correspondence, grant writing, documentation, recruitment, and large amounts of time for planning. Help from many different faculty (part and full time), coordinators, secretaries, and others is essential. A rural team is essential. The members of the team need to contribute a multitude of necessary talents including networking skills, administration, evaluation strategy, and funding abilities in addition to the standard practice and education efforts. Effective rural programs take specialized part and full time rural faculty (who operate in the academic world as well as rural practice), a dedicated group of staff, and a supportive administration.

PRINCIPLES OF RURAL MEDICAL EDUCATION

INITIATE RURAL PROGRAMS EARLY When considering the timing of rural programs, it is important to remember "to vote early and vote often". Students form their concept of what a doctor is at an early age. Some have role models in families or close friends. Those in rural areas (with fewer health providers) have less opportunity for these exposures as their potential role models are too busy or less available. School counselors in rural areas have little time to deal with problem students, much less gifted ones. Programs to encourage rural health careers should start in high school or before. Medical students examine faculty, residents, and students in their environment and compare that with what they would like to become. Initial impressions drive the decision for rural practice.

CONSIDER INTIMATE PROGRAMS Closeness is certainly a recognized asset and liability in rural America. Medical students naturally seek out their peers for support. In programs where students go out alone to rural areas to work with rural practitioners or communities, they seek their support from confident providers or caring community people. In many cases a bond is formed. This may be responsible for the success of such programs as ANSA's Health Promotion and Disease Prevention Project and the Minnesota Rural Physician Associate program. Rural program directors often have a choice of establishing larger rural academic centers or diffusing trainees over wide and smaller locations. It is certainly easy to establish large centers. They have the advantage of size (purchasing, staffing, easier accreditation), but large rural academic centers have no track record of producing rural physicians. They can easily resemble the urban tertiary academic centers that defeat the purpose of the rural experience. If two or more students gather together, they are more likely to bond with each other, not the experience or the community.

CHOOSE LOCATIONS AND FACULTY WISELY There are many reasons to establish rural programs. Local and state political entities may be desperate for medical services. Educators want good training faculty. Administrators want support for facilities and faculty with established community contacts. Some communities reach out and support programs and some do not (due to history, economic decline, lack of leadership, or other reasons). A quality rural training location must have good faculty, community support, and political support. If faculty are to be hired, they must be compatible with each other and the community. The quality of other health providers must also be considered as trainees will contact them during their stay. Often the location is a matter of proximity to the main program with few or no providers who can serve as faculty. It is important to expect a slow development of programs in such locations as it takes time to develop contacts, community educational resources, and a patient base. In these situations it is important to have long term support. Promises must be made cautiously if at all in the first years.

CONTINUOUS PROGRAM EXAMPLES

RURAL HIGH SCHOOL CAREER WORKSHOPS ETSU's MASH (Medical Applications of Science and Health) Workshops bring rural high school students from underserved areas to the campus of ETSU to examine different health careers. They spend time with students and faculty in Medicine, Nursing, and Allied Health. They see interesting demonstrations (such as heart and lung anatomy) and attend presentations by the many health disciplines. They discuss obstacles that they are facing regarding a choice of a health profession; and faculty discuss ways to bypass these obstacles, including scholarships, special counseling and academic preparation courses, preferential admissions, early admissions, and loan repayments.

ADMISSIONS TO MEDICAL SCHOOL is a critical area. It is a great waste to prepare rural and primary care programs for students who are heading for subspecialty medicine. The ETSU application pool is up 27% this year, but numbers of students alone are not enough to assure state governments (which increasingly question major expenditures for higher education). State governments want to see rural physician production and they are tired of laying out the tax dollars for 30 or 40 students to produce one shortage area physician. Perhaps the best indication of appropriate admissions is the family practice match. ETSU has a ten year PP match rate of 17% and produced 61 primary care residents over the past two years (60% of the class). As medical schools prepare for specific rural community-based training, the admission of primary care and rural preference students becomes even more critical.

THE MEDICAL SCHOOL ENVIRONMENT is important. The attitude of the school must be that a career as a rural practitioner is an expectation. The institutional mission, curriculum, departments, chairmen, faculty, and residents must all be a part of this environment. Those who plan rural health careers must be supported, not discouraged. In the likely case that the environment is not conducive to rural choices, a Family Practice or Rural Student Interest Groups may be helpful. These groups identifies students with family practice or rural interest as early as possible. These students meet with each other, with rural faculty, and with rural preceptors in the first two years for information and support for rural experiences, for realistic and practical information on rural practice, for consideration of special rural training experiences, and for career counseling.

THE "HANDS-ON" APPROACH Students who plan rural health careers are advised that they need the full seven years of medical education to obtain the clinical, procedural, and practice management competence that they need to be comfortable establishing their own rural practice. Students preparing for rural practice are encouraged to "take charge" of their patients. A "hands-on" approach may be more risky to faculty and institutions, but it is necessary for rural interested students. Clinical experiences in the third and fourth years confirm their interest. These students are encouraged to choose residency programs that will facilitate these rural goals.

SPECIAL RURAL TRAINING PROGRAMS allow students to fully appreciate rural practice and the role of the rural physician. The Appalachian Preceptorship instructs 12 students each year in the basics of rural practice, the role of the physician, and the effect of an individual's beliefs and culture on health delivery. Students then spend 4 weeks in a rural community, armed with the curiosity that will allow them to probe the practice, the community, and the physician. The Rural and Community Medicine rotations for our family practice residents do much the same. Rural practice cannot be taught from a book or in a lecture. It must be seen and examined in person.

FELLOWSHIPS IN RURAL MEDICINE emphasize the rural difference. Fellows concentrate in areas that will facilitate their chosen careers. Rural fellows must be very self-directed; they need to know themselves as well as what kind of practice that they plan. Those choosing rural practice often concentrate on procedures and rural practice management. Other fellows choose experiences leading toward a career as a rural faculty member or rural health administrator. The presence of fellows at the university tells students that rural medicine is rewarding and challenging. Students in this environment learn to respect rural practice and practitioners. Fellows add to the critical mass necessary to establish and maintain quality rural medical education.

RURAL FACULTY DEVELOPMENT Rural Minifellows train specifically in rural medical education, rural health policy, and rural curriculum so that they can return to their own programs and best advise rural-interested students and residents. They prepare programs and rural projects that facilitate the advance of rural programs at their home locations. Minifellows work with consultants in rural health and each other to support these administrative and educational goals. Minifellows must educate their program directors, administrators, chairmen, and others for their programs to be successful. All who contact students and residents must have some understanding of rural medical education.

SUPPORT FOR GRADUATES WHO CHOOSE RURAL Residency graduates in nearby rural towns often provide an "academic network" of practitioners who encourage students and residents to pursue rural careers. They benefit from support from the program as they act as part-time faculty. Successful rural programs such as the Minnesota's Rural Physician Associate Program become institutionalized when graduates who chose rural teach new RPAP students.

States want to be sure that their tax dollars are used wisely. State-funded programs also want to have a good track record of rural physician production. It is difficult to keep physicians in a state without a conducive practice environment. This includes the reimbursement policies, liability, and special incentives. The state of Tennessee has an innovative loan repayment program that repays \$50,000 for 30 months of service in rural Tennessee. Another \$25,000 is included for practice start-up expenses. Solo physicians receive 2 weeks of locum tenens coverage a year. Technical assistance is available to new physicians in the state. Tennessee recruited 53 doctors last year and will recruit another 18 this year. Established physicians in Tennessee may practice obstetrics in an OB shortage area and have the state pay for their OB liability insurance. Medicaid and Medicare reimbursements to rural physicians in the state are also reasonable. There is no Medicaid geographic differential in the state to discriminate against rural providers. Recent Medicaid changes regarding obstetrics have increased eligibility and reimbursements to \$1000. The practice environment of the state is an important part of recruitment and retention.

OVERALL COORDINATION OF RURAL PROGRAMS requires such effort. Grants of various types aid in this effort. Area Health Education Center grants support management and coordinating personnel, networking with community providers, and training efforts. Multiple foundations support different grants regarding rural health education. Often a small grant will set up a larger one. For example a small state grant for a rural health center satellite led the way to a larger medical education grant involving multiple sites over a period of several years. New foundation and federal grants to fund rural training appear yearly. Those who collaborate with rural communities, the health department, and rural providers will easily find themselves in a position to receive funding for rural programs. Finally federal family practice grants assist in the development of rural programs. Program grants may fund personnel such as faculty or other providers. Predoctoral grants fund student rural experiences. Faculty development grants help faculty specialize in rural health. Some states support efforts to coordinate rural programs through state ANECs, Departments of Health, local or regional health departments, the Department of Education, regional agencies for the aging, or other health care organizations.

EVALUATION AND RESEARCH EFFORTS ARE IMPORTANT Rural academics must balance the rigorous standards of academia with the practical considerations of running rural programs.

A FINAL SUMMARY

Rural medical education differs from current medical education in many positive ways. Rural medical education restores the emphasis on service, balancing it with education and research efforts. Medical students learn more in rural community-based programs by actually doing, rather than watching. They accept more responsibility and this acceptance leads to greater educational value. Medical students in Minnesota's RPAF program exceed their urban in almost every measurable category.

Rural medical education may be more costly and it will certainly take a great deal of time and effort. Travel and living costs for students and faculty, faculty development, site development, and other specialized training costs eat into ever tightening budgets. Rural practice revenues are not as lucrative as the usual medical school practice base. Many rural programs are new and will therefore require more initial startup costs and lots of time by deans, chairmen, and officials at all levels of government.

The investment cost is high, but the need for rural physicians is higher. We believe that a coordinated comprehensive program is the best method to stimulate and maintain rural interest. It prepares students and residents for longer, more productive careers. It also provides a measure of guarantee to state agencies that the needs of the state will be met and that tax dollars are used effectively. This will provide a measure of security for medical educators to avoid further state regulation regarding curriculum or program development - thus avoiding the difficulties of mandated systems.

Rural medical education is good for medical schools, good for students and residents, and good for the country (the motto of the National Rural Health Association - Rural Health is good for the country).

A RURAL CURRICULUM

ABOUT THE DIDACTIC MATERIAL The Core Rural Concepts courses supplement those who are or who will soon be learning in a rural community. The course work includes lectures, discussions, seminars, and conferences. This curriculum is for rural-interested residents, fellows, minifellows, medical students, graduate nursing students, and graduate students in allied health as well as current rural health professionals.

It is nearly impossible to schedule talks or discussions in all these categories. The best use of this curriculum occurs when faculty or coordinators choose topics that are of most interest to the potential recipients.

EMPHASIZE THE LOCAL SITUATION It is important to adapt the curriculum to the local situation. Rural can be very different across the nation. Demographics vary greatly. Different states have different laws governing the various providers. The practice environment of each state varies widely. Curriculum planners are advised to use state, regional, and local speakers as much as possible to deliver the topics and personalize the presentations.

Those who will enter rural communities benefit from some initial preparation. Appalachian Preceptor students receive a week of instruction on rural institutions, providers, and the effect of culture on health care. They examine the role of the physician in the rural community. Students armed with this information are seeking out the rural difference from the start instead of emphasizing only the clinical and biomedical aspects.

INTERACTIONS ARE CRITICAL Medical education pits students against a mound of educational material. Successful health care involves mastering people skills. Medical education typically retards the natural maturation process of learning to deal with others on an adult level. Somehow educators must reconcile these very different goals. Some programs emphasize the doctor-patient relationship. This is useful for all medical students, but rural physicians must often go beyond the person and family to that of the community level. To educate in this area is useful to form teams of students from different disciplines. Physicians who choose rural communities must "grow up" fast. They must learn to balance their own needs with those of their practice and the community. They need to learn to cooperate and delegate. Interpersonal skills are critical to rural physicians. These needed assets can be learned from role models or they can be developed in small group situations wrestling with programs or projects with others from different backgrounds. AMSA's Health Promotion and Disease Prevention project excels in this area. The Kellogg interdisciplinary education goals will also emphasize this.

RURAL TRAINING MUST OCCUR IN RURAL LOCATIONS This seems fairly obvious, but it is often overlooked. Interactions with rural role models and bonding with the rural way of life are impossible to accomplish without rural communities. In a sense the entire community becomes the training location.

Core Rural Concepts Topics

- Rural Health Overview
 - Defining rural
 - Demographics
 - Economics
 - Interdependency
 - Rural Health Advocacy
- Rural Providers - Ambulatory Issues
 - Reimbursement Issues
 - Rural Definitions
 - State and Federal Health Policy Regarding Providers - PHS
 - Types of Providers - Allied, Nursing, Physicians
 - Provider Organization
 - Solo, Group, Multispecialty Satellites
 - Academic Rural Health Centers
 - Community Health Center
 - Rural Health Clinic
 - Public Health
 - Other
 - Rural Practice Management
 - Balancing Practice, Community, Family and Personal Needs
- Rural Health Profession Supply and Demand
 - Recruitment
 - Retention and Satisfaction Issues
 - National Studies
 - State and Regional Programs
- Education and Training for Rural Providers
 - The Decision for Rural Practice
 - The Pipeline to Rural Practice - Rural Medical Education Programs and Barriers to Rural Practice - PEPP, PREP, RPAP
 - Rural Career Tracks
 - Plan and Implement Rural Presentations for Students
 - AHECS
- Rural Community-Oriented Primary Care
 - Assessing the Needs of Rural Communities
 - Priorities in Rural Health Care
 - Community Leadership/Advocacy
 - Case Studies of Community Development and Health Care
 - Teaching COPC to Students
 - Participants in Health - Health Dept., Schools, Businesses, Extension, Leader
- Rural Health Facilities
 - Rural Hospital Problems and Solutions
 - Developing and Maintaining a Primary Care Base
 - Local Government and Rural Health Hospital Alternatives
 - Community and Board Evaluation and Education Programs
 - Rural Nursing Homes and Skilled Care
 - Multi-skilled Rural Health Professionals
- Rural Clinical Topics
 - Agrimedicine Topics - Toxins, Farm Safety/Injuries, Noise abatement
 - Occupation Health
 - Sports Medicine and School Health
 - Research Issues
 - Uncertainty and Problem Solving
 - Health Education
 - Trauma and Emergency Care
 - Rural Infectious Diseases
 - Mental Health in Rural Areas
 - Emergency Medical Systems
 - Rural Obstetrics
 - Cardiology - ACLS
 - Surgery - Triage and Acute Trauma Management and ATLS
 - Difficult Patients - Demanding, Chronically Ill, and Terminal Patients

Sociological and Governmental Issues in Rural Health
 Local Resources - Public Health Welfare Offices
 Other Health Advocates in Rural Areas
 Chamber of Commerce
 Health Facility Administrators
 State Departments of Health and Offices of Rural Health
 State Provider Organizations - Primary Care, Rural, Professions
 Federal Office of Rural Health Policy
 National Organizations and Rural Health - NRHA, AMA, AAFP, APHA, ANA
 The Role of the Rural Physician
 Social Issues and Rural Health Policy
 Emerging Issues in Rural Health
 Regionalization
 Offices of Rural Health

OBSTACLES TO RURAL TRAINING PROGRAMS

Few true rural training programs currently exist. Family practice initiated nearly all of the current "rural" medical education programs. Many of the rural obstacles involve family practice obstacles. The following paper discusses the obstacles to the development of rural medical education programs.

I. FINANCE

Primary care reimbursement rates will remain low despite the reforms of RRHS. Graduate medical education finance also discriminates against primary care, although this may soon change. Practice-based revenues dominate family practice residency funding and therefore rural program finance.

Rural programs bring the extra costs of transportation (of students, residents and faculty), housing, and communications. The developmental costs for a quality program can be high, especially for those who have previously invested little time in building a network of rural physicians, providers, and communities.

Established rural programs can return some of the investment as revenues reaped by the services of residents and students. Rural training track residents at Spokane see 30% more patients and do 30% more procedures. Rural Physician Associate Program (RPAP) students in Minnesota bring \$20,000 to \$80,000 extra dollars to their preceptors during their 9 month stay. The RPAP program at Syracuse (modeled after RPAP) collects \$15000 per student from each community. Most of these funds come from rural hospital recruiting budgets. These revenues can offset the costs of stipends, travel, housing, faculty, etc. Many rural programs are understaffed. Faculty who run the programs also see patients, administer other programs, and do research. Someone must coordinate the programs and keep up correspondence, solicit information, and provide communication. This means adequate staff and faculty to prepare and maintain a quality program. The nationwide deficiency of family practice funding and faculty impedes rural programs most dramatically. Most rural programs are far too dependent on a single rural faculty person.

Faculty development is critical to rural programs. Experienced rural faculty may be recruited from the field, but they must be trained in academics, rural medical education, and rural health policy. This type of comprehensive faculty development involves a commitment of program funds and resources.

New models of reimbursement of rural-based practitioners are needed. Many rural sites are chosen primarily because of their physician - one who is enthusiastic about practice, about teaching, and about their community.

II. FACULTY

In order for rural programs to be successful, faculty must specialize in this area. They must have protected time (from patients and other administrative duties) to develop rural programs. Commonly, part- or full-time rural faculty are working long hours on weekends or evenings to prepare programs.

The need for training faculty in rural concepts is grossly unrecognized. A recent AAFP survey noted that 83% of PP program directors felt that their programs prepared residents adequately for rural practice. Without specific rural training for faculty, how can programs train residents? Few specific rural faculty development programs exist and often rural faculty are left alone and isolated to establish important programs. Medical education is not by nature conducive to rural recruitment. Rural faculty must understand the medical school problem and any other obstacles, studying state and federal rural health policy to keep up with the needs of students or residents considering rural careers. Rural faculty should understand finance, debt, scholarships, and loan repayment, and to help meet students' needs. Rural faculty must also understand a variety of rural practice locations, rural facilities, and practice modes.

The rural arena is a significant opportunity for career development of faculty in family medicine. Rural must be a major thrust for faculty development, just as rural was used by the fathers of family medicine to get funding throughout the years. Currently rural practice is not included as years of experience toward salary or benefits. The reward structure of academic medicine should favor those with rural practice and rural faculty experience.

Family practice programs have established consultants to help programs. They do not currently utilize rural consultants. Advice from rural program experts helps save time, money, and mistakes. Rural consultants can outline models and concepts currently in operation that may fit the local situation.

III. REQUIREMENTS

Finally, the requirements for rural training programs inhibit the development of rural programs. Medical schools still balk at these programs despite studies showing the production of superior students. Part of this obstruction is political (department chairs), but part is based on fears such as the cost or the need for peer interaction. Many argue that there is no documentation of the quality of rural training programs. This data exists and in many cases the evaluation methods are actually better than those existing in urban medical schools.

On the resident level, the Residency Review Committee (RRC) impedes progress for Family Medicine. The essentials reward urban hospital-based programs by requiring extensive hospital resources, a program location adjacent or nearby a hospital, levels of peer interaction, and continuity of practice experiences. One program developing in Eastern Kentucky modeled the rural practices of the area by using the large 2 person practice of the former practitioner. Initial papers were exchanged and the RRC forced a location adjacent to the hospital. Even special exceptions to the RRC guidelines such as the Rural Training Tracks of Spokane and Greeley must have 4 FP's committed to education, 3 or more other specialists, and a hospital big enough for an ER, CCI, OB, Surgery, Orthopedics and some other subspecialties. To meet all these guidelines, the "rural" programs become suburban and hospital-based rather than the rural outpatient base that were used to attract residents to rural areas.

IV. STUDENT CHOICE - MEDICAL SCHOOL ADMISSIONS AND ENVIRONMENT

The decision for rural practice is complex, involving the rural background of the student and spouse, and location of training. It is clear that medical schools are choosing fewer rural background students. The training in urban locations involves more urban spouses. The more "rural" the program location then the more likely a rural practice. Unfortunately the smaller areas will support smaller numbers of residents and faculty in a program. Small programs and 1 - 2 programs suffer from difficulty in matching residents with slots and their spouses with a variety of job needs. Once a program matches poorly, students tend to avoid such programs where they are likely to be overwhelmed by the workload (data on the program match rate is available to them). One or two 1-day visits is often not enough time to evaluate a residency, much less find a job and meet the social needs of a family. In larger cities the variety and lifestyle are much easier to find.

New programs in urban areas make matching even more of a problem. A new 14-14-14 program in Houston, Texas started this year despite poor Texas FP match rates. The source of funds was an urban hospital district desperate for physicians to care for patients. Competition for the few "rural" medical students is similar to that of rural America - too few graduating and too many needed.

V. RECOMMENDATIONS

1. Better primary care reimbursements for shortage rural areas, rural practitioners, and primary care graduate medical education - Specific rural faculty lines for central (25%) and peripheral (75%) faculty could be provided to insure the development of rural programs.
2. Funding language to make primary care and rural training a must for health professions schools - Medical schools must not ignore the need to illustrate the concepts of primary care. Specialists must also understand rural health to be able to better participate, even in a limited role such as that of a referral physician.
3. State legislative efforts to examine the funding of health professions and insure that the needs of the state fit the institutional mission and environment of the school. The needs and advice of rural communities should be taken into account.
4. Inclusion of rural faculty in the certification process of training programs. Training programs for potential rural providers should involve training in areas similar to those in which the trainee will practice. Current models that have documented excellence in education should be adopted.

1. The funding ratios should mirror the distribution of rural and urban population (25% of the nation is rural).

Care must be taken when implementing these policies to gather information from currently operating rural programs so that adjustments do not harm those training "rural". For instance, per cent decreases in urban training funds may dilute their pool to invest in rural or specialty requirements. Resending only family practice may harm a few internal medicine programs. Some primary care programs are private or community-based, yet have high indigent or Medicaid populations. Their training and their patient's access to care could be disrupted in the effort to reward rural programs. Programs should therefore be phased in and should accommodate programs with high numbers of indigent or Medicaid.

Not all of these obstacles are addressable at one setting, but one by one these forces must realign medical education with the needs of society. These changes must disrupt the factors that drive students to urban subspecialty choices. More work is needed to identify and change each factor. The effort must be continuous, efforts at higher levels depend on work done previously and lower level work at the high school, college, and medical school levels must not be injured by graduate medical education. Appropriate models for rural training programs have been established. Implementation is the next step. This involves changes in finance, medical school policy, and regulation.

1 However, too much indigent care or Medicaid can harm education if programs do not have the numbers of physicians, ancillary staff (clerks, social work), or support staff to meet the tremendous needs of these disadvantaged people.

POLICY ANALYSIS ON THE RESOURCE BASED RELATIVE VALUE SCALE

THE RURAL IMPACT

Robert C. Bowman, M.D.
ETSU Department of Family Medicine

The debate over RBRVS may be a factor in the declining medical student interest in rural and primary care. The perception (by current rural physicians) that RBRVS is less than initially promised could hurt rural physician retention. RBRVS could indeed have an initial negative impact on recruitment and retention of rural health professionals for the first five to ten years of the program. After that period, rural recruitment may improve as students see the "relative" penalties increasingly imposed on subspecialties.

THE IMPACT OF THE GREAT DEBATE - RBRVS promised improved reimbursements to primary care physicians. The future of primary care and rural practice are the same as rural practice is almost totally primary care. The discussion of RBRVS impacted on all physicians, including those in training. The national debate of RBRVS made medical students very aware of the differences in reimbursement for cognitive and procedural medicine. This debate may be a factor in declining rural and primary care interest. Despite improvements in rural practice, heightened recruiting efforts on all levels, a new focus of medical education on rural programs, and the restoration of federal rural funding, match rates for primary care and graduating medical student interest (131 in recent AAMC survey) in rural practice continue to decline.

PERCEIVED "LOST" REVENUE - Current rural physicians face critical shortages of personnel. They also know that they work longer and harder and face more responsibility daily for less pay than non-rural physicians. RBRVS seemed to promise a reward for these efforts. Improved revenues of 30 to 50 % offered a chance for rural doctors to improve their recruitment of colleagues or hire physicians to replace them for time off. Deterioration in the promises of RBRVS may make them feel that RBRVS will be no help at all. After the assaults of the MAAC, assignment, PRO's, and the financial threats of DRG's, rural physicians have a low trust of federal programs. They need to see some real relief on the way, not diluted promises. The slow, prolonged implementation of RBRVS will present complications, uncertainties, and not be the dramatic, recognizable boost of income that could make a retention impact. Increased marketing of rural health clinics and federally qualified health centers could bypass RBRVS, but the dissemination of this information and implementation of these programs still remains regrettably slow. Without real help, more rural physicians may decide they have had enough. The loss of any rural physicians is crucial because the shift of patients to other physicians (if available at all) overwhelms them and causes additional pressures on recruitment and retention.

THE IMPACT OF IMPLEMENTATION - Even before implementation, the RBRVS could (and possibly has already) stimulate a marketing war for the few family practice and other primary care graduates. Large urban and suburban groups drive the demand for these graduates. Current family practice residency graduates receive some 1,000 offers for every available resident. HMO's, management care, emergency rooms and urgent care centers fuel the demand for these graduates. They also recruit heavily in rural America. They know that graduates within two years of their residency have a high turnover rate. Many of these groups have doubled and tripled their efforts to recruit family practitioners. Part of this increased effort may be the recognition that RBRVS will increase their own revenues. They also know that the salaries of these primary care specialists are unlikely to increase in the near future. These groups can and will shift their patient encounters for routine care over to primary care physicians, taking them away from their subspecialists. This will enable them to hire less subspecialists and save two to three hundred thousand dollars per subspecialist. The end result will be more demand in urban areas and more difficult recruitment and retention for rural hospitals, community health centers, and other rural entities. Needless to say, the effect on access to care in will not be encouraging.

STATE LEVEL IMPACT - The initial negative impact of RBRVS will increase the importance of loan repayment and other practice support programs over the next five to ten years. Most states have one or more of these programs in place. Some states even include retention packages, such as two weeks of locum tenens for solo doctors and OB liability subsidies. These and other retention packages will become critically necessary over the next five to ten years. The worsening of recruitment and retention will certainly put even more pressure on medical education to produce the kinds of physicians needed for the states and the nation. This is certainly a time for innovation and creativity and hard work for those involved in training rural health professionals.

HEALTH MANPOWER POLICY CHANGES - With the continuation of shortages, re-evaluation of rural health manpower is important. The current policy rewards the shortest of the shortage areas. An analogy would be parachuting in a few physicians like commandos only to have them perhaps burn out more quickly, rather than moving the front line forward by stabilizing systems with three or four doctors. New health service corps physicians may face a very different environment - one with little call sharing or peer support from nearby non-corps rural physicians. Placement of physicians will need to withstand local political pressures in order to enhance the long term goal of increased retention and access to rural physicians. Above all, graduates should be matched closely with their personal, family, and professional needs.

EMPHASIS ON RETENTION - One area of much needed analysis is this concept of "matching" to a community. There will be a premium on getting the most numbers of years out of the few who go into rural practice. Training programs should be encouraged and rewarded for working in these areas. What few rural-bound graduates that are produced should not be squandered. Communities should be encouraged and/or required to prepare comprehensive needs assessments involving their health care education and economic development. This would be used to assure states and the federal government that they have utilized these precious resources effectively.

DISCUSSION OF IMPORTANT RURAL ISSUES - An important factor to recognize is that the rural response to major changes in federal health policy (such as diagnosis related groups) has been slow. They lagged behind in the education of physicians and were slower to "manipulate" the system into the best diagnoses for reimbursement. Rural areas could be just as slow to respond to the increased recruiting competition that may result.

VARIABLES IN THE ANALYSIS - This analysis also depends on the lack of major changes in health policy or management - not likely in the current medical environment.

Forces that could shift the balance rural include reductions in the payment for emergency room care ("steals" primary care graduates) and decreased support for managed care in urban areas (or increased support for managed care in rural areas). Tax incentives, increased medical school tuition, and state loan repayments may also shift graduates (who have every increasing debts) to rural underserved areas. The federal government or graduate education might force resident physicians to train as primary doctors first, requiring this 3 years of training and two to four years of primary care practice before further subspecialty training.

Market forces may also shift the balance more urban. Family practice graduates are far more valuable than the pay they receive. Demand for them far outstrips supply. Recognition of this difference might eventually result in a major change in the attitude of primary care physicians. For instance the widespread adoption of physician "agents" (representing physicians and paid by them to search and contract for work) or unionization may force much higher salaries. Rural areas would be less able to ante up to play these games.

RBRVS IS STILL A VERY IMPORTANT PROGRAM - A positive impact of RBRVS will be felt in medicine, but not for some years. The major change will be an impact on choices for primary care. As students see the slow change to preferentially reimbursed primary care, more will choose this direction. They may also respond to the reduction of subspecialists to the realm of medical technicians. RBRVS is needed to improve the rural practice environment - more financial reward, more peers to share the load, and more support for rural facilities. Improvements in RBRVS must be matched by changes in medical education, health policy, and local communities in order to provide better health care in rural America.

Increased pressures by the states and federal government will also drive improved recruitment of primary care physicians. True physicians will continue to be in contact with the patients, patient advocates and prudent managers of the nation's health care dollars. RBRVS will help to divide true medicine from technology and doctors from technicians. America wants primary care doctors to care for them. They also have a love affair with the technology.

OUTLINE

- I. The examination of the demand for primary care and associated practitioners such as nurse practitioners.
- II. Current strategies for multispecialty groups, HMO's, etc. regarding recruiting.
- III. Effect of the RBRVS to improve rural retention of current practitioners.
- IV. Lengthy response times from rural areas as they react to the RBRVS, as noted in the past with the DRG's and the MAAC.
- V. Secondary effects as subspecialists become mere technicians impacting on medical students decisions.
 - A. Reaction of subspecialists
 - B. Reaction of patients
 - C. Discussion of physician image and who will be a physician

The Pipeline to Rural Practice

The decision for rural practice is a whole series of decisions throughout the years of education and training. Rural background is an important factor in placing rural physicians. Students from rural areas need support and guidance. Medical school admissions committees are the next hurdle. The medical school environment holds other obstacles - urban hospital-based subspecialty role models, urban spouses, and an exilic life style. Few residencies prepare residents for rural practice. A choice which demands personal maturity, professional competence, and a great capacity to care for people. The following is a brief summary of some critical areas.

Low Priority for Rural Education

Rural health, rural education, and rural economies are completely interdependent. They are also all desperately in need of investment. At least four state's rural school districts have sued the state over maldistribution of educational funds. This lack of funding contributes much to the overall picture. Appalachian females in 1860 were among the most highly educated females in the world. The Civil War and constant strife resulting from economic and political disaster (Appalachians were suspected union sympathizers) led to three generations of no schools. Appalachia suffers the results to this very day.

The Early Years

Medical schools face declining numbers of rural applicants. There are many reasons for this decline. Admission committees seem to lack understanding of the differences in rural and urban students. Rural students may lack GPA and MCAT scores, but they show better interpersonal and community skills. Math and science are noted to be deficient in rural areas. Students who do not turn on to science will not choose health careers. Various programs can increase science interest, the first of the decisions along the pathway to rural practice.

Improving Science Interest - Various programs stimulate interest in science. The AMA has a Natural Science Ambassador program. Medical schools such as Tufts and Baylor have ambitious science education programs. Urban science museums sponsor innovative programs as well. Minorities lag some 4 years behind non-minority students. They also lag in medical school admissions. I suspect that rural students lag some 4 years behind as well. They have even less access to science programs and initiatives.

Secondary Education

This is a time of learning relationships. More abstract concepts face students pursuing science interest. Quality teaching and laboratory experience are important. BioPrep is a longstanding program located in the Mississippi Delta. The target for this program is science and math enrichment. The program has stimulated teachers involved in this project to become rural physicians. It enables underprivileged rural children to fulfill their dreams. Computers are utilized in Texas Learning Technology Centers earth science programs. Eight grade students do experiments with the Role models and counselors are important at this level. Early experiences with health care can influence students in this direction. With fewer and busier providers, the decline of this influence is an expected result. At workshops for rural students, the students note that their counselors are so busy with problem kids that they do not have the time or inclination to help them with career counseling. 4. Millicent Gorham, the Washington DC representative to the National Rural Health Association, suggested that the NRNA contact the National Organization of School Counselors to work in this area. She is doing that now. School health professionals are also important. I just wrote the section on School Health today to ask their cooperation in this effort. Unfortunately schools facing declining enrollments and finance often cut or reduce these positions. School health clinics could help in this area. Rural physicians need to work closely with their schools in these areas. Successful rural recruitment programs such as Kentucky's Professions Education and Placement Program (PEPP) utilize school counselors to identify rural high school students who could become physicians. The local medical society in Bartlesville OK holds a yearly banquet in honor of the areas best science students and teachers. The contact is brief but the message is clear - consider a career in medicine. Other programs discriminate against health careers. Iowa's Youth Job program excludes students from summer health jobs because they are not mature enough. Competing programs for developing lawyers stage competitive mock trials and debates. A very important area involves Community Problem Solving groups. Local and state competitions hone the skills of these groups of high school students. Three years ago the students attacked teen pregnancy. The choice of health topics (as opposed to legal or other) and the sponsorship of rural health professionals would help stimulate these dedicated students. Another potential source to evaluate is teen peer groups. Teen peer groups choose to help one another. This willingness to be involved should not be ignored by admissions committees or those organizing premedical recruitment programs.

College Preparation

At the college level PEPP gives students advice regarding courses, grades, and special events to attend. Many do not "know the ropes" of health careers as well as their urban peers. Minorities have summer enrichment programs to bolster these areas, so important to GPA and MCAT and medical school preparation. Rural students should be offered similar programs.

Rural areas need health professionals of all types. Programs beginning at the high school level or before can increase the pool of rural applicants.

1. Charlotte Ross, PhD, Appalachian State University
2. Personal contact as the AMA Delegate to the Young Physicians Section
3. PEPP - Kentucky ABCC program
4. MASH Workshop at ERSU

RURSIG - Rural Student Interest Groups
A Presentation for the Predoctoral Conference in San Antonio
Robert C. Bowman, M.D., Director of Rural Programs

The ERSU Department of Family Medicine sponsors the RURSIS, supplying some funds, a coordinator, and a faculty advisor. The RURSIS consists of students interested in rural practice and operates as a separate branch of the FPSIG. Components include:

- Monthly programs of speakers or visits to rural physicians, facilities, locations for rescue training, farm safety education, or hiking, rafting, camping. Faculty also take students out with faculty to rural practices when they "pinch hit" at rural locations.
- Group meetings to discuss and encourage each other in rural plans.
- Role models - rural doctors to act as advisors to students.
- Newsletters and memos including information about local and national rural events and coordination of activities with FPSIG, AMA, Christian Medical and Dental Society

There are many ways to encourage and maintain rural interest. Rural student interest groups are only one part of a continuous rural program.

There are some basic concepts behind RURSIS (and all rural programs):

- A. Help students break away from the mainstream of medical education (urban, hospital, subspecialty) and access quality rural experiences
- B. Utilize enthusiastic faculty and role models
- C. Communicate accurate information about the challenges and rewards and combat misinformation by medical schools and the media
- D. Match people and places for training and practice
- E. Support present and future rural physicians

Suggestions for accomplishing the above in a rural student interest group

- A. Breaking away from the mainstream
 - Provide and develop rural experiences during medical training
 - Work with the nearby physicians, rural clinics, the state, the farm bureau, home extension, and primary care organizations.
 - Students have set up their own clinics in NM, NC
 - Enlist and develop rural faculty and rural practice role models
 - Start a support group for a primary care or rural decision
 - Emphasize to students - You must be different, train with different faculty at different locations and at different programs emphasizing a different subject (rural, cultural, community-oriented, underserved) and demonstrating a different attitude on rotations (assertive and even aggressive about managing patients and doing procedures). Rural physicians need the full 7 yrs of training to prepare well. This allows them to bridge the gap that separates them from rural practice. This bridge is built as trainees successfully master clinical, procedural, practice management, and personal skills.
- B. Enthusiastic Faculty and Role Models
 - Must have commitment to work in an Emerging and Exciting Specialty, one that is unique and diverse
 - Emphasis on and support for procedural medicine in medical school and residency
 - Success in managing one's own practice and life
 - Acceptance of a career that is personally challenging
 - Burned out rural faculty or practitioners turn students off
- C. Communicate - Inform students about the great opportunities for practice and the great rewards
 - Inform students about rural training programs. Current models include early brief exposure to practicing rural doctors in or before the first year, Rural Preceptorships (Like ETSU's Appalachian Preceptorship, AMA's HOP, or other Statewide preceptors, Community-based rotations such as in Minnesota and other areas.
 - Combat misinformation and negativism about rural practice in media presentations. Produce your own publications and newsletters to students and residents. Remember that for every problem in rural practice, there is a method for overcoming that problem in training or in practice. Example - The perception of rural practice as constant overwork. Solution - Join a group practice or get ER coverage or moonlighters).
 - Give good information about the rewards of rural practice through presentations and publications
 - Loan Repayments to those who choose rural
 - RRBS - big improvements in rural physician income on the way
 - Emphasis on community level interactions - leadership, education, occupational, cultural, and public health
 - Autonomy through Rural Health Clinics or solo practice or Non-profit service oriented salaried practice with good pay
 - Clinical challenge - diverse, truly challenging illnesses
 - Rewards of doing needed service
 - Feeling of community appreciation & mutual bonding between the physician and the community
- D. Support current and future rural physicians - support groups and role model advisors. Remember, rural physicians get as much or more out of student and resident interactions as the students.
- E. Emphasize the importance of matching people and places. The gap between training and rural practice seems too wide to bridge at one leap. Each month of training should narrow the gap between the trainee and rural practice - through competence in clinical, procedural, practice management, and personal areas. There is a training method and a rural practice that can fit any of those who want to make the effort. There is much choice out there, so many locations available. Candidates should examine many possibilities to make the best fit possible - one that will satisfy practice, personal, and family needs. Rural practice is a marriage with a community, facilities, and others. The more graduates know about an area, the better they can choose.

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OBSTACLES, TRAINING METHODS, AND PRACTICE CHOICES

Each individual has his or her own special concerns when contemplating rural practice. A few are mentioned on the left column. The second column describes some methods helpful in overcoming this problem. The objectives of this training lie in the third column. Even if training has not overcome all obstacles, there are so many different opportunities that graduates can look for communities or modes of practice that overcome their concerns. For instance an urban born and bred doc may choose a group practice to address concerns about rural life and practice.

Concern about rural practice	Method helpful to bridge gap	Results of method	Modifiers that may allow rural if concern not address
Rural life and practice is a great unknown	Exposure	Expectations clearer	Start as Locum Group practice Community/faculty advisors
Uncertain finances	Options taught Know self	Guarantee Rural health clinic Loan Repayment Seek high demand	Group Hospital Community economy
Uncertain Clinical	Hands on Assertive Aggressive Attitude on Rotations	Clinical/procedural competence Knowing limits	Group practice Larger rural area More services available or other doctors
On call	personal management	Balance	Group Emergency Room docs Call restrict Moonlighters Time away
Community Responsibilities	Exposure	Role models	Rural Mentor
Practice needs OB surgery Hospital	"	"	"
Other factors to consider			
Personal needs Recreation poems	Spouse needs Job Education Social	Family Needs Schools Church Friends	

PLANS FOR THE SECOND RURAL HEALTH CAREERS FAIR AT ETSU

Goal

To introduce students from rural, medically underserved communities to the variety and opportunities in the health professions and to encourage them to apply to colleges to prepare for these programs.

Background

The Rural Health Career Fair, also called the MASH Workshop, was the idea of Shane Roberts, COM '91. He proposed a Workshop to promote medical careers among high school students from the medically underserved counties surrounding ETSU. Shane obtained the support of the Department of Family Medicine and Dean Stanton. From March of 1990 there were a series of planning meetings with Shane, other students, Dr. Joellen Edwards (Nursing), Dr. Sue Barr (Public and Allied Health), and Drs. Dorothy Dobbins, Pamela Zahorik, and Robert Bowman from the College of Medicine. ETSU sponsored the first MASH Workshop on September 29, 1990. Thirty-eight students from 10 rural high schools attended.

Targeted Students

Selected 9th, 10th, and 11th grade students from these rural high schools:

County	Schools
Johnson	Johnson County High School
Unicoi	Unicoi County High School
Grainger	Rutledge High & Washburn High Schools
Hamblen	Morristown-Hamblen East & West High Schools
Hancock	Hancock County High School
Jefferson	Jefferson County High School
Carter	Cloudland, Hampton High, Elizabethton, Happy Valley, & Unaka High Schools
Greene	Chucky-Doak & West Greene High Schools
Hawkins	Cherokee & Volunteer High Schools
Cocke	Ben Hooper Vocational & Cosby High School

The planning committee wants to improve communication with the high school personnel who will select the participants. Rural interested students in the COM have suggested that we gather rural interested students from all health science programs to visit the target schools. The purpose will be to clarify the criteria to be used in selecting students and to stimulate interest in the Workshop among good students who might not be selected by the teacher/counselor.

Medical, nursing, and allied health students from ETSU will make visits to many of the targeted schools to stimulate students to apply through their school science department. The science department in each school will then select able students who might be appropriately stimulated into health careers.

Location

The Rural Health Career Fair will be held in the Culp Center on Saturday, October 26, from 8 a.m. to 4 p.m.

Curriculum

The content of the day's sessions will cover the college admissions process, three introductory workshops showing the variety of careers and skills used in medicine, nursing, and public and allied health, and an address by a rural hospital administrator showing the current and projected demand for these various health professionals.

ETSU students from all three schools will participate in contacting and visiting the schools and as guides on the day of the fair. Some of the ETSU students, trained by the Admissions Office, will lead small group sessions on the college admissions process.

Faculty and staff of the three schools will work with their students to develop the three one-hour workshops on options and skills in medicine, nursing, and public and allied health.

Schedule

9:00 - 9:30	Arrival/Registration/Welcome
9:30 - 10:00	Speaker, Jim McMakin, Unicoi County Memorial Hospital
10:00 - 10:30	"The College Admissions Process" to be conducted by ETSU students specially prepared by the Admissions Office.
10:45 - 11:45	Workshop Session: The College of Medicine, the School of Nursing, and the School of Public and Allied Health will conduct simultaneous workshops.
12:00 - 1:00	Lunch at the Main Hall in the Culp Center.
1:15 - 2:15	Workshop Session II: Students rotate to another session
2:30 - 3:30	Workshop Session III: Students rotate to another session
3:30 - 3:45	Complete and submit evaluation forms in third session
3:45	Home

Resources

The Planning Committee members are:

Dr. Nancy Alley, Nursing
 Dr. Sue Barr, Public and Allied Health
 Max Bonek, Nursing
 Dr. Robert C. Bowman, Family Medicine
 Kevin Buchanan, RURSIG (Rural Student Interest Group)
 Cummins Couch, RURSIG
 Brenda Foster, Public and Allied Health
 Brian Howard, Family Medicine
 Dr. Forrest Lang, Family Medicine
 Linda Nwosu, Family Medicine
 Tammy Powell, FPSIG, Family Practice Student Interest Group

The next meeting of the planning committee is Tuesday, September 10 at 11:30 a.m. Members should bring a bag lunch.

Student participation - This is a critical area. Faculty from all departments of Health Sciences will enlist student groups at their divisions to participate. As in 1990, the health science students will act as guides to the visiting students.

Materials - Drs. Sue Barr and Nan Boneh are revising last year's materials for the high school teachers/counsellors which give the criteria for selection of participants. These will reflect our desire for students who are people-oriented, who are interested in any of these health careers, and who are in or able to go into a college prep high school program (have taken or will take the prerequisite science and math courses).

Impact and Evaluation

The '91 Workshop participants are surveyed at the workshop. The '90 Workshop participants will be surveyed at the same time that applications for the '91 Workshop are being collected. We are interested in finding out which former participants are actually planning to pursue a health career, where they are planning to attend college, and whether they were influenced in any way by that day's program.

Budget for the Workshop

Last year's expenses of \$561.83 were paid for from the Dean's Foundation Account. This year Dean Stanton has pledged \$270 from the College of Medicine, approximately one third of the projected budget.

Projected Budget the 1991 Workshop for 86 students:

Food Service	
At (rolls and juice)	\$ 70.00
Lunch for high school students	409.00
Lunch for health science students	100.00
Speaker	100.00
Transportation for pre-Workshop visits to selected schools by students and faculty (about 500 miles)	131.00
	<u>\$810.00</u>

Materials and faculty time will be provided by the divisions and are not included in the budget.

Other resources

Michelle Banner at Talent Search, works with a program funded by the Department of Education to identify and provide counselling for poor but able students entering 12th grade in eight of these counties and 9th and 10th graders in two counties. She is willing to recommend participants, based on their records of students' career goals and academic standing.

Ronnie Gross, Director of Upward Bound here at ETSU, works with 10th- 12th graders in a program to give similar counselling plus enrichment and tutoring to promising students from poor families or from families where neither parent was college educated. He is willing to work with us to identify students from Unicoi and Carter counties to participate.

Mike Pitts of the Admissions Office has agreed to help prepare ETSU students selected to present "The College Admissions Process."

Jim McMakin, a hospital administrator at Unicoi County Memorial Hospital has accepted the invitation to address the students.



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